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U of Philippines '12-1913

THE UNIVERSITY OF THE PHILIPPINES

CATALOGUE
1911-1912

ANNOUNCEMENTS
1912-1913

THE UNIVERSITY OF THE PHILIPPINES
BULLETIN NO. 2

MANILA
BUREAU OF PRINTING
1912

The University of the Philippines

⁂

COLLEGE OF LIBERAL ARTS

JUNIOR COLLEGE DEGREE, B. A.
SENIOR COLLEGE DEGREE, M. A.

COURSE IN PHARMACY

DEGREES, PHAR. G., PHAR. CH.

COLLEGE OF MEDICINE AND SURGERY

DEGREES, M. D., D. P. H.

COLLEGE OF LAW

DEGREE, LL. B.

COLLEGE OF AGRICULTURE

DEGREES, B. AGR., B. S. AGR., B. S. F.

COLLEGE OF ENGINEERING

DEGREE, C. E.

COLLEGE OF VETERINARY SCIENCE

DEGREE, D. V. M.

SCHOOL OF FINE ARTS

THE UNIVERSITY OF THE PHILIPPINES

CATALOGUE
1911-1912

ANNOUNCEMENTS
1912-1913

THE UNIVERSITY OF THE PHILIPPINES
BULLETIN NO. 2

MANILA
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1912

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THE UNIVERSITY OF THE PHILIPPINES

SECOND ANNUAL ANNOUNCEMENT AND CATALOGUE

Calendar

Day of week and month	Event
1912	
Tuesday, June 4	Legal holiday.
Monday, June 10	College of Agriculture opens.
Monday to Saturday, June 17 to 22	Entrance examinations.
Thursday to Saturday, June 27 to 29	Registration and physical examination days for all colleges except Agriculture.
Monday, July 1	Exercises of first semester begin.
Thursday, July 4	Legal holiday.
Tuesday, August 13	Legal holiday.
Monday to Saturday, October 28 to November 2.	Final examinations of first semester.
Saturday, November 2	First semester ends.
Sunday to Sunday, November 3 to 10	Intersemester vacation.
Monday, November 11	Exercises of second semester begin.
Thursday, November 28	Legal holiday.
1913	
Sunday to Sunday, December 22 to January 5.	Christmas vacation.
Monday, January 6	Exercises resumed.
Saturday, February 22	Legal holiday.
Monday to Saturday, March 24 to 29	Final examinations of second semester.
Monday to Thursday, March 31 to April 3.	Commencement week.

Board of Regents of the University of the Philippines

REGENTS EX OFFICIO

THE HONORABLE NEWTON WHITING GILBERT,
Secretary of Public Instruction, Chairman of the Board.

THE HONORABLE DEAN C. WORCESTER, B. A.,
Secretary of the Interior.

FRANK RUSSELL WHITE, PH. B.,
Director of Education.

THE HONORABLE EMILIANO TRIA TIRONA, B. A., LICENCIADO DE JURIDICOS.
Chairman of the Committee of Public Instruction
of the Philippine Assembly.

MURRAY BARTLETT, B. A., M. A., D. D.,
President of the University.

THE HONORABLE E. FINLEY JOHNSON, B. S., LL. M.,
Justice of the Supreme Court.

APPOINTED REGENTS

THE HONORABLE RAFAEL PALMA, B. A., LICENCIADO DE JURIDICOS.
Term expires 1912.

MANUEL DE YRIARTE, B. A.
Term expires 1913.

THE HONORABLE IGNACIO VILLAMOR, B. A., M. A., LL. M.
Term expires 1914.

JOSE ESCALER, B. A., LL. B., LL. M., M. A.
Term expires 1915.

THE MOST REVEREND JEREMIAS JACOB HARTY, D. D.
Term expires 1916.

OFFICERS OF THE BOARD OF REGENTS

THE HONORABLE NEWTON WHITING GILBERT,
Chairman.

McQUEEN S. WIGHTMAN, B. A.
Secretary.

JOHN LAWRENCE BARRETT,
Treasurer of the Philippine Islands, Treasurer ex officio.

STANDING COMMITTEES OF THE BOARD OF REGENTS

COLLEGE OF LIBERAL ARTS

Mr. WHITE.
Mr. TIRONA.

COLLEGE OF MEDICINE AND SURGERY

Mr. WORCESTER.
Mr. JOHNSON.
Mr. VILLAMOR.

COLLEGE OF LAW

Mr. PALMA.
Mr. JOHNSON.
Mr. ESCALER.

COLLEGE OF AGRICULTURE

Archbishop HARTY.
Mr. PALMA.

COLLEGE OF VETERINARY SCIENCE

Mr. TIRONA.
Mr. WORCESTER.

COLLEGE OF ENGINEERING

Mr. JOHNSON.
Mr. WHITE.

SCHOOL OF FINE ARTS

Mr. ESCALER.
Mr. DE YRIARTE.

PERSONNEL

The PRESIDENT OF THE UNIVERSITY.
Archbishop HARTY.
Mr. PALMA.

LEGISLATION

Mr. VILLAMOR.
Mr. PALMA.
Mr. TIRONA.

GROUNDS AND BUILDINGS

The CHAIRMAN OF THE BOARD OF REGENTS.
Mr. WHITE.
Mr. WORCESTER.

Officers of Administration

MURRAY BARTLETT.
President of the University.

PAUL CASPAR FREER,
Dean of the College of Medicine and Surgery.

EDWIN BINGHAM COPELAND,
Dean of the College of Agriculture.

RAFAEL ENRIQUEZ,
Dean of the School of Fine Arts.

LAWRENCE EDMONDS GRIFFIN,
Dean of the College of Liberal Arts.

CLARENCE G. WRENTMORE,
Dean of the College of Engineering.
(July, 1912-1913.)

ARCHIBALD ROBINSON WARD,
Acting Dean of the College of Veterinary Science.

SHERMAN MORELAND,
Acting Dean of the College of Law.

LAWRENCE EDMONDS GRIFFIN,
Acting Dean of the College of Engineering.
(June, 1910-1912.)

McQUEEN S. WIGHTMAN,
Secretary of the University and of the University Council.

JAMES FINLEY KEMP,
Registrar of the University.

UNIVERSITY COUNCIL

The University Council consists of the President, Secretary, Registrar, the Deans, and all officers of instruction holding the rank of professor, associate professor, and assistant professor.

Officers of Instruction

PROFESSORS

GEORGE PATRICK AHERN,
Professor of Forestry.

United States Military Academy, 1882.
Major, U. S. A. (retired).
LL. B., Yale, 1895.
(Director of the Bureau of Forestry.)

JOSE ALBERT,
Professor of Pediatrics.

B. A., Ateneo de Manila, 1882,
M. D., Universidad Central de Madrid, 1889.

ARISTON BAUTISTA Y LIN,
Professor of Clinical Medicine and Therapeutics.

M. D., Universidad Central de Madrid.

FERNANDO CALDERON,
Professor of Obstetrics.

B. A., Ateneo de Manila, 1885.
L. M., Universidad de Santo Tomás, Manila, 1891.

EDWIN BINGHAM COPELAND,
Professor of Economic Botany.

Ph. D., University of Halle-Wittenberg.

PAUL CASPAR FREER,
Professor of Chemistry.

M. D., Rush Medical College, 1882.
Ph. D., University of Munich, 1887.
(Director of the Bureau of Science.)

VICTOR G. HEISER,
Professor of Hygiene.

M. D., Jefferson Medical College.
(Director of the Bureau of Health.)

JOHN RICH McDILL,[1]
Professor of Surgery.

M. D., Rush Medical College, 1885.

WILLIAM EVERETT MUSGRAVE,
Professor of Clinical Medicine.

M. D., Georgetown University, 1902.

RICHARD PEARSON STRONG,
Professor of Tropical Medicine.

Ph. B., Yale University, 1893.
M. D., Johns Hopkins University, 1897.

CLARENCE WRENTMORE,
Professor of Engineering.

B. S. C. E., M. S. C. E., C. E. University of Michigan.

FREDRICK W. TAYLOR, F. R. G. S.,
Professorial Lecturer in Horticulture.
(Director of the Bureau of Agriculture.)

---

[1] Resigned.

PROFESSORS—Continued

ADAM C. CARSON,
Professorial Lecturer on Government.
LL. B., University of Virginia.

AMASA S. CROSSFIELD,
Professorial Lecturer in Law.
LL. B., LL. M., Georgetown University.

CHARLES BURKE ELLIOTT,
Professorial Lecturer on International Law.
LL. B., LL. D., University of Iowa.
Ph. D., University of Minnesota.
LL. D., Marietta College.

CHARLES S. LOBINGIER,
Professorial Lecturer in Law.
LL. M., Ph. D., University of Nebraska.

ASSOCIATE PROFESSORS

VERNON LEE ANDREWS,
Associate Professor of Pathology and Bacteriology.
M. D., University Medical College, Kansas City, 1906.

HANS ARON,
Associate Professor of Physiology.
M. D., Ph. D., University of Berlin.

ELBERT CLARK,
Associate Professor of Anatomy.
B. S., University of Arkansas, 1903.

WILLIAM JOSEPH COLBERT,
Associate Professor of Mathematics.
B. A., Dartmouth College, 1900.

HUGH MACALLUM CURRAN,
Associate Professor of Forest Management.
B. S., Agricultural College of North Carolina.

HORACE GROVE DEMING,
Associate Professor of Chemistry.
Ph. D., University of Wisconsin, 1911.

CARROLL FOX,
Associate Professor of Hygiene.
M. D., University of Pennsylvania, 1897.

HARRY DRAKE GIBBS,
Associate Professor of Chemistry.
B. S., Cornell University, 1895.

PHILIP KINGSNORTH GILMAN,
Associate Professor of Medical Zoology.
M. D., Johns Hopkins University.

ALBERT G. GLODT,
Associate Professor of Agricultural Engineering.
C. E. and M. E., Ecole Centrale des Arts et Manufactures, Paris, 1896.

LAWRENCE EDMONDS GRIFFIN,
Associate Professor of Zoology.
B. A., and Ph. B., Hamline University, 1895.
Ph. D., Johns Hopkins University, 1900.

LUIS GUERRERO,
Associate Professor of Tropical Medicine.
L. M., Universidad de Santo Tomás.

ASSOCIATE PROFESSORS—Continued

ELMER DREW MERRILL,
Associate Professor of Botany.
B. S., M. S., University of Maine.

REINHARD REMBE,
Associate Professor of Ophthalmology, Otology, Rhinology, and Laryngology.
M. D., Royal University, Berlin, 1894.

BALDOMERO ROXAS,
Associate Professor of Obstetrics.
B. A., Ateneo de Manila, 1885.

ALFRED OGLE SHAKLEE,
Associate Professor of Pharmacology.
B. S., University of Chicago, 1899.
M. D., St. Louis University, 1908.

ERNEST LINWOOD WALKER,
Associate Professor of Medical Zoology.
B. A. S. (1896), S. B. (1903), S. D. (1907), Harvard University.

HARRY NICHOLS WHITFORD,
Associate Professor of Forest Botany.
Ph. D., University of Chicago.

JAMES REMUS WRIGHT,
Associate Professor of Physics.
Ph. D., University of Chicago, 1911.

ASSISTANT PROFESSORS

RHEINART PARKER COWLES,
Assistant Professor of Zoology.
B. A., Stanford University, 1899.
Ph. D., Johns Hopkins University, 1904.

DEAN SPRUILL FANSLER,
Assistant Professor of English.
B. A., Northwestern University, 1906.
M. A., Columbia University, 1907.

HARRIOTT ELY FANSLER.
Assistant Professor of English.
Ph. B. (1902), M. A. (1906), Northwestern University.

FREDRICK WILLIAM FOXWORTHY,
Assistant Professor of Dendrology.
Ph. D., Cornell University, 1904.

DONALD GREGG,[1]
Assistant Professor of Tropical Medicine.
B. A. (1902), M. D. (1907), Harvard University.

EDGAR MADISON LEDYARD,
Assistant Professor of Entomology.

RUSKIN LHAMON,
Assistant Professor of Anatomy.
B. A., University of Missouri, 1907.
M. D., Washington University, Mo., 1910.

DONALD MAXWELL MATHEWS,
Assistant Professor of Forestry.
B. A. (1908), M. S. F. (1909), University of Michigan.

A. S. PEARSE,[1]
Assistant Professor of Zoology.
B. S., University of Nebraska, 1900; M. A., 1904.
Ph. D., Harvard University, 1908.

---

[1] Resigned.

ASSISTANT PROFESSORS—Continued

MARIANO VIVENCIO DEL ROSARIO,
Assistant Professor of Chemistry.
Phar. D., University of Madrid, 1893.
M. S., University of Chicago, 1909.

HANS SCHIFFBAUER,
Assistant Professor of Surgery.
M. D., University of Illinois, 1907.

WALTER ROBERT SHAW,
Assistant Professor of Botany.
B. A. (1892), M. A. (1894), Ph. D. (1897), Leland Stanford Junior University.

DAVID WILLETS,
Assistant Professor of Medical Zoology.
Ph. B., Wesleyan University, Middletown, Conn., 1902.
M. D., George Washington University Medical School, 1907.

HAROLD CUZNER,
Farm Superintendent, Agricultural College, Los Baños.
B. S., University of Wisconsin.

INSTRUCTORS

JOSE M. ASUNCION,
Secretary School of Fine Arts and Instructor in the History of Art.

ALVIN BROERMAN,
Instructor in Veterinary Anatomy.
D. V. M., Ohio State University, 1909.

TEODORO BUENAVENTURA,
Instructor in Elementary Drawing.

VICTOR BUENCAMINO,
Instructor in Veterinary Surgery.
D. V. M., Iowa State College, 1911.

JOHN A. CHRISTENSEN,
Instructor in Business Arithmetic and Methods.

MARIANO MANAS CRUZ,[1]
Instructor in Agronomy.
B. S. (1908), Iowa State College.

ARTEMAS LAWRENCE DAY,
Instructor in English, College of Agriculture.
B. S. (1898), Valparaiso University.

SAMUEL BERT DURHAM,
Instructor in Animal Husbandry.
B. S. (1904), Oklahoma State Agricultural College.

JOSE EDUQUE,
Instructor in Surgery.
M. D., Philippine Medical School, 1909.

RAFAEL ENRIQUEZ,
Dean, School of Fine Arts and Instructor in Color and Composition.

THOMAS JOSEPH FREEMAN,
Instructor in French and Mathematics.
B. A., Laval University, 1897.

VICENTE FRANCISCO,
Instructor in Sculpture.

ANTONIO GARCIA,[2]
Instructor in Engraving.

---

[1] Resigned.

[2] Dead.

INSTRUCTORS—Continued

MIRIAM EDMONS GRIFFIN,
Instructor in Hygiene.
B. A. (1900), M. D. (1905), University of Minnesota.

POTENCIANO GUAZON,
Instructor in Surgery.
B. A., Ateneo de Manila, 1903.
M. D., University of Chicago, 1908.

PERRY COLEMAN HAYS,[1]
Instructor in History and Government.
LL. B., Washington University.

ROY WALLACE HAMMACK,
Instructor in Bacteriology and Pathology.
B. A., University of Oregon, 1907.
M. D., Johns Hopkins, 1911.

JOAQUIN M. HERRER,
Instructor in Landscape and Drawing from Life.

WILLIAM TATUM HILLES,
Instructor in Spanish.
B. A., Haverford College.
M. A., Harvard University, 1905.

RICHARD MORRIS HOLMAN,
Instructor in Botany.
B. A., Leland Stanford Junior University.

JOSE PETRONIO KATIGBAK,[1]
Instructor in Graphics.
B. A., Universidad de Santo Tomás, Manila.
B. S. in Engineering, Harvard University.

CARRIE STEIN LEDYARD,
Instructor in Modern Languages.

AMBROSIO MAGSAYSAY,
Instructor in Graphics.
C. E., Cornell University, 1909.

ALICE JOSEPHINE O'MALLEY,
Instructor in Latin.
B. A., Smith College, 1898.

CHARLOTTE ELIZABETH NEALE,
Instructor in History.
B. L., University of California, 1901.

MAURICIO JULIAN OTEYZA,
Instructor in Silviculture.
B. S. A. (1908), Kansas State Agricultural College.
M. F. (1911), Yale University.

VICENTE RIVERA,
Instructor in Drawing.

FABIAN DE LA ROSA,
Instructor in Decorative Art.

JOSÉ IGNACIO DEL ROSARIO,
Instructor in Chemistry.

---

[1] Resigned.

INSTRUCTORS—Continued

SALVADOR VIVENCIO DEL ROSARIO,
Instructor in Hygiene.
B. A., University of Santo Tomás, Manila, 1879.
M. D., University of Madrid, 1889.

RANDALL ADAMS ROWLEY,
Instructor in Geology.
B. S., University of Chicago, 1906.

MIGUEL ZARAGOZA,
Instructor in Anatomy in the School of Fine Arts.

ALEXANDER EDWARD WROTTESLEY SALT,
Instructor in History and Economics.
B. A., University of Oxford (Balliol College), 1897.
M. A., McGill University, 1908.

OTTO JOHN SCHEERER,
Instructor in German.
B. L., University of Cincinnati (1897).

EDWIN EMIL SCHNEIDER,
Instructor in Wood Technology.
B. L., University of Cincinnati (1897).

ANDREW WATSON SELLARDS,
Instructor in Tropical Medicine.
M. D., Johns Hopkins University.

ANTONIO GUILLERMO SISON,
Instructor in Clinical Medicine.
B. A., M. A., San Juan de Letran, Manila, 1903.
M. D., University of Pennsylvania, 1908.

ROY STANLEY SWINTON,
Instructor in Physics and Surveying.
B. C. E., University of Michigan, 1910.

LAWRENCE DILLER WHARTON,
Instructor in Zoology.
B. A., Missouri Valley College, 1907.

W. L. WRIGHT,
Instructor in Public Speaking.
B. S., B. L., Valparaiso University.

LECTURERS ON LAW

SHERMAN MORELAND.
B. L., LL. B., Cornell University.

GREGORIO ARANETA.
B. A., LL. M., University of Santo Tomás.

CHARLES BURKE ELLIOTT.
LL. B., LL. D., University of Iowa.
Ph. D., University of Minnesota.
LL. D., Marietta College.

GEORGE BOCOBO.
LL. B., Indiana University.

LECTURERS ON LAW—Continued

CLYDE A. DEWITT.
LL. B., University of Michigan.

W. L. GOLDSBOROUGH.
LL. B., University of Maryland.

GEORGE ROGERS HARVEY.
LL. B., Kansas City School of Law.

FRANK B. INGERSOLL.
B. A., University of Tennessee, 1886.

CHARLES SUMNER LOBINGIER.
LL. M., Ph. D., University of Nebraska.

GEORGE A. MALCOLM.
B. A., University of Michigan.
LL. B., George Washington University.

CARLOS SOBRAL.
B. A., University of Santo Tomás.

LECTURERS ON SPECIAL TOPICS

CHARLES SUMNER BANKS,
Lecturer on Medical Entomology.
M. S., University of the State of New York, 1899.

WILLIAM HUTCHENS BOYNTON,
Lecturer on Pathology and Clinical Microscopy.
D. V. M., Cornell University, 1908.

JOHN W. FERRIER,
Lecturer on the Law of Negotiable Instruments.
LL. B. (1895), University of Michigan.

MAURICE BRUCE MITZMAIN,
Lecturer on Veterinary Entomology.
B. S., University of California, 1908; M. S., 1910.

ROBERT E. L. NEWBERNE,
Lecturer on Mental and Nervous Diseases and Medical Jurisprudence.
M. D., Georgetown University.

JAMES ALEXANDER ROBERTSON,
Lecturer on Philippine History and Government.
Ph. B. (1896), L. H. D. (1900), Western Reserve University.

ERNEST HENRY RUEDIGER,
Lecturer on Immunity and Serum Theraphy.
M. D., Rush Medical College, 1903.

JOHN P. WEISSENHAGEN,
Lecturer on the Law of Damages.

FRED WILLEN WOOD,
Lecturer on Serum Prophylaxis in Rinderpest.
D. V. M., Cornell University, 1907.

STANTON YOUNGBERG,
Lecturer on Civics and Veterinary Jurisprudence.
D. V. M., Ohio State University, 1907.

OTHER OFFICERS OF INSTRUCTION

INOCENCIO ELAYDA,
Assistant in Mathematics.
B. S. A., Iowa State College.

JESUS GONZALES,
Extern.
B. A., San Juan de Letran, Manila.
M. D., Rush Medical College, 1909.

JOSE HILARIO,
Demonstrator in Pathology and Bacteriology.
M. D., University of the Philippines, 1911.

FELIX HOCSON,
Demonstrator in Physiology.
B. A., Ateneo de Manila, 1902.
Phar. Ch., University of Michigan, 1909.

LEONGIO AMADOR LOPEZ,
Assistant in Pediatrics.
B. A., Ateneo de Manila, 1903.
M. D., Philippine Medical School, 1909.

DANIEL DE LA PAZ,
Assistant in Pharmacology.
M. D., College of Medicine of Illinois, 1910.

MANUEL ROXAS,
Assistant in Chemistry.
B. S. A., University of the Philippines, 1911.

HONORIA ACOSTA SISON,
Assistant in Obstetrics.
M. D., Women's Medical College of Pennsylvania, 1909.

COURT R. STANLEY,
Intern.
M. D., Rush Medical College, 1911.

ARISTEO UBALDO,
Assistant in Opthalmology.
B. A., L. M., Universidad de Santo Tomás, Manila, 1905.

ATHLETIC ASSOCIATION

BOARD OF CONTROL

FACULTY MEMBERS

Associate Professor **WILLIAM JOSEPH COLBERT**, President.
Assistant Professor **HANS SCHIFFBAUER**, Secretary-Treasurer.
Assistant Professor **FRED W. FOXWORTHY**.

STUDENT MEMBERS

ALEC SCHUCKS.
MANUEL V. ARGUELLES.
PAULINO GULLAS.

COMMITTEE ON ADMISSIONS

LAWRENCE EDMONDS GRIFFIN.
FRANK RUSSELL WHITE.
GEORGE A. MALCOLM.

LAW FOUNDING THE UNIVERSITY OF THE PHILIPPINES

An Act for the purpose of founding a university for the Philippine Islands, giving it corporate existence, providing for a Board of Regents, defining the board's responsibilities and duties, providing higher and professional instruction, and for other purposes. [Act No. 1870, amended by Act No. 2024, enacted Jan. 30, 1911.]

By authority of the United States, be it enacted by the Philippine Legislature, that:

SECTION 1. The Governor-General is hereby authorized, within the powers and limitations hereinafter specified, to establish in the city of Manila, or at the point he may deem most convenient, a university which shall be known by the designation of "University of the Philippines," the same being organized as a corporation under that name.

SEC. 2. The purpose of said university shall be to provide advanced instruction in literature, philosophy, the sciences, and arts, and to give professional and technical training.

SEC. 3. No student shall be denied admission to the university by reason of age, sex, nationality, religious belief, or political affiliation.

SEC. 4. The government of said university is hereby vested in a Board of Regents to be known as the "Board of Regents of the University of the Philippines." The Board of Regents shall be comprised of the Secretary of Public Instruction (who shall be *ex officio* chairman of the Board), the Secretary of the Interior, the Director of Education, the chairman of the Committee of Public Instruction of the Philippine Assembly, the president of the university, and a justice of the Supreme Court to be designated by the Governor-General, and five additional members to be appointed by the Governor-General, by and with the advice and consent of the Philippine Commission. The president of the university shall be elected and his compensation shall be fixed by the Board of Regents. The members of the Board of Regents appointed by the Governor-General shall hold office for a term of five years: *Provided, however,* That the regents first appointed by the Governor-General shall hold office as follows: One for one year, one for two years, one for three years, one for four years, and one for five years, the term of office of each to be specified in his appointment by the Governor-General. In case of a vacancy among the members of the Board of Regents appointed by the Governor-General, such vacancy shall be filled by appointment by the Governor-General, by and with the advice and consent of the Philippine Commission, and such appointees shall hold office for the unexpired term. All members of the Board of Regents shall be citizens of the Philippine Islands or of the United States, and shall be residents of the Philippine Islands. Members shall serve without compensation other than actual and necessary traveling expenses incurred either in attendance upon meetings of the Board or upon other official business authorized by resolution of the Board.

SEC. 5. The University of the Philippines shall have the general powers set out in section thirteen of Act Numbered Fourteen hundred and fifty-nine, and the administration of said university and the exercise of its corporate powers are hereby vested in the Board of Regents.

SEC. 6. The Board of Regents shall have the following powers and duties, in addition to its general powers of administration and the exercise of the powers of the corporation:

(*a*) To receive and appropriate to the ends specified by law such sums as may be provided by law for the support of the university;

(*b*) To provide for the establishment of a College of Liberal Arts; a College of Law; a College of Social and Political Science; a College of Medicine and Surgery; a College of Pharmacy; a College of Dentistry; a College of Veterinary Science; a College of Engineering; a College of Mines; a College of Agriculture; and a School of Fine Arts; and colleges which the Legislature may provide for by appropriation: *Provided,* That the Board of Regents may establish these colleges or any of them as soon as in its judgment conditions shall favor their opening and funds shall be available for their maintenance: *And provided further,* That the Board of Regents, by and with the approval of the Governor-General, shall have power to combine two or more of the colleges authorized by this Act, in the interest of economy and efficiency: *And provided further,* That the Philippine Medical School, as established by Act Numbered Fourteen hundred and fifteen, as amended, shall become the College of Medicine and Surgery of the Philippine University as soon as two or more colleges of the University of the Philippines shall have been established and in actual operation;

(*c*) To confer the usual honorary degrees upon persons other than graduates of the university in recognition of learning, statesmanship, or eminence in literature, science, or art: *Provided,* That such degrees shall not be conferred in consideration of the payment of money or other valuable consideration;

(*d*) To establish chairs in the colleges hereinbefore mentioned, and to provide for the maintenance or endowment of such chairs, as well as to provide for such other professors, assistant professors, instructors, tutors, and lecturers as the progress of instruction may make necessary, and to fix the compensation pertaining to such positions;

(*e*) To appoint, on recommendation of the president of the university, professors, instructors, lecturers, and other employees of the university, to fix their compensation and to remove them for cause after an investigation and hearing shall have been had;

(*f*) To approve the courses of study and rules of discipline drawn up by the university council as hereinafter provided; to fix the tuition fees required of students, as well as matriculation fees, graduation fees and fees for laboratory courses, and all special fees; and to remit the same in special cases;

(*g*) To provide fellowships and scholarships and to award the same to students giving special evidence of merit;

(*h*) To prescribe rules for its own government, and to enact for the government of the university such general ordinances and regulations, not contrary to law, as are consistent with the purposes of the university as defined in section two of this Act.

SEC. 7. A quorum of the Board of Regents shall consist of a majority of all the members holding office at the time the meeting of the Board is called. All process against the Board of Regents shall be served on the president or secretary thereof.

SEC. 8. On or before the tenth day of August of each year the Board of Regents shall file with the Governor-General a detailed report, setting forth the progress, condition, and needs of the university.

SEC. 9. There shall be a university council, consisting of the president of the university and of all instructors in the university holding the rank of professor, associate professor, or assistant professor. The council shall have power to prescribe the courses of study and rules of discipline, subject to the approval of the Board of Regents. It shall fix the requirements for admission to any college of the university, as well as for graduation and the receiving of a degree. The council alone shall have the power to recommend students or others to be recipients of degrees. Through its president or committees it shall have disciplinary power over the students within the limits prescribed by the rules of discipline approved by the Board of Regents. The powers and duties of the president of the university, in addition to those specifically provided for in this Act, shall be those usually pertaining to the office of the president of a university.

SEC. 10. The body of instructors of each college shall constitute its faculty, and as presiding officer of each faculty there shall be a dean elected from the members of such faculty by the Board of Regents on nomination by the President of the University. In the appointment of professors or other instructors of the university, no religious test shall be applied, nor shall the religious opinions or affiliations of the instructors of the university be made a matter of examination or inquiry: *Provided, however,* That no instructor in the university shall inculcate sectarian tenets in any of the teachings, nor attempt, either directly or indirectly, under penalty of dismissal by the Board of Regents, to influence students or attendants at the university for or against any particular church or religious sect.

SEC. 11. Professors and other regular instructors in the university shall be exempt as such from any civil-service examination or regulation as a requisite to appointment.

SEC. 12. There shall be a secretary of the university, appointed by the Board of Regents. He shall be the secretary of such Board and also of the university, and shall keep such records of the university as may be designated by the Board.

SEC. 13. The Treasurer of the Philippine Islands shall be *ex officio* treasurer of the university, and all accounts and expenses thereof shall be audited by the Insular Auditor, and all disbursements shall be made in accordance with rules and regulations prescribed by him.

SEC. 14. Heads of Bureaus and Offices of the Insular Government are hereby authorized to loan or transfer, upon request of the president of the university, such apparatus or supplies as may be needed by the university and to detail employees for duty therein, when in the judgment of the head of the Bureau or Office such supplies or employees can be spared without serious detriment to the public service. Employees so detailed shall perform such duty as is required under such detail, and the time so employed shall count as part of their regular official service.

SEC. 15. The President of the Commission, the Speaker of the Philippine Assembly, and the justices of the Supreme Court shall constitute a board of visitors of the university, whose duty it shall be to attend the commencement exercises of the university, and to make visits at such other times as they may deem proper, to examine the property, courses of study, discipline, the state of finances of the university, to inspect all books and accounts of the institution, and to make report to the Governor-General upon the same, with such recommendations as they favor.

SEC. 16. The sum of one hundred thousand pesos is hereby appropriated, out of any funds in the Insular Treasury not otherwise appropriated, to be expended in the discretion of the Board of Regents for the establishment of a college or colleges authorized by this Act the establishment of which may be considered most urgent.

SEC. 17. This Act shall take effect on its passage.

Enacted, June 18, 1908.

HISTORICAL SKETCH

Pursuant on the passage of the foregoing Act by the First Philippine Legislature, the work of establishing the colleges thus provided for was begun during the latter part of the year 1908.

The Philippine Medical School, established by a special Act on December 1, 1905, and opened to students for the purpose of instruction on June 10, 1907, became the College of Medicine and Surgery of the University on December 8, 1910.

The School of Fine Arts was temporarily established in a house rented for that purpose on Calle San Sebastian, Quiapo, in the city of Manila, and was opened to students in June, 1909.

A location for the College of Agriculture was obtained by the transfer to the Board of Regents of certain lands near Los Baños, in the Province of La Laguna, which had already been secured by the Bureau of Education for an Agricultural School. A temporary building was erected on this property, and school work began there in June, 1909.

Buildings for a College of Veterinary Science were erected on land adjoining the animal quarantine station at Pandacan, Manila. The first class was received in June, 1910.

The College of Liberal Arts, and the College of Engineering were established June 3, 1910, and their classes opened the same month. The College of Liberal Arts had previously existed as a Government school in the Bureau of Education, known by the name of the Junior College of Liberal Arts.

The College of Law was established January 12, 1911. A course in pharmacy was instituted under the administrative control of the College of Liberal Arts, June 5, 1911.

The College of Agriculture is situated at Los Baños. All other colleges of the University are in Manila.

The government of the University of the Philippines is intrusted to a Board of Regents, consisting of the Secretary of Public Instruction, the Secretary of the Interior, the Director of Education, the chairman of the Committee of Public Instruction of the Philippine Assembly, the president of the university, an Associate Justice of the Supreme Court, and five additional members who are appointed by the Governor-General. To the Board of Regents is committed the general administration of the university; this includes the management of its finances, the establishment of such colleges and schools as are authorized by law, the conferring of degrees, the establishment of departments of instruction and appointment of teachers, the approval of courses of study and rules of discipline, and the determination of the internal organization in all particulars which are not fixed by law.

The instruction and government of the students of the university are intrusted to the faculties of the several colleges and to the university council.

The faculty of each college consists of the president of the university, and those professors and instructors whose departments are represented in it by required or elective studies.

The constitution and powers of the special faculties are defined by section 10 of the University Act.

> The body of instructors of each college shall constitute its faculty, and as presiding officer of each faculty there shall be a dean elected from the members of such faculty by the Board of Regents on nomination by the president of the university. In the appointment of professors or other instructors of the university, no religious test shall be applied, nor shall the religious opinions or affiliations of the instructors of the university be made a matter of examination or inquiry.

The constitution and powers of the university council are defined as follows by section 9 of the University Act.

> There shall be a university council, consisting of the president of the university and of all instructors in the university holding the rank of professor, associate professor, or assistant professor. The council shall have power to prescribe the courses of study and rules of discipline, subject to the approval of the Board of Regents. It shall fix the requirements for admission to any college of the university, as well as for graduation and the receiving of a degree. The council alone shall have the power to recommend students or others to be recipients of degrees. Through its president or committees it shall have disciplinary power over the students within the limits prescribed by the rules of discipline approved by the Board of Regents.

The Board of Visitors is a body consisting of the president of the commission, the speaker of the Philippine Assembly, and the justices of the supreme court, whose duties are to attend the commencement exercises of the university, to make visits at such other times as may be deemed proper, to make a general examination from time to time of the academic and financial condition of the university, and to make reports to the Governor-General, with such recommendations as they favor.

OPPORTUNITIES FOR GRADUATE STUDY

While the University of the Philippines is not prepared to confer the degree of Doctor of Philosophy, there are exceptional opportunities in several departments to do graduate or research work.

Botany.—The herbarium of the Bureau of Science, which is rapidly being increased, now contains about 90,000 mounted specimens, of which approximately two-thirds are Philippine and the remainder extra-Philippine. The material is well arranged by families, genera, and species, so that everything on hand is readily accessible for study. This collection, with the accompanying library facilities of the Bureau of Science, forms one of the best centers for taxonomic research outside of Europe and North America.

The extra-Philippine material is for the most part from the Tropics, and in developing this part of the herbarium especial attention has been given to securing representative botanical material from the Indo-Malayan region in general; the herbarium contains exceedingly valuable collections of plants from India, southern China, Formosa, Cochin China, the Malay Peninsula and Archipelago, Australia, and the Caroline Islands, not only recently procured, but also from the older historical collections (such as those of Wallich, Gaudichaud, Jaquemont, Hooker and Thompson, and Henry). There is also much valuable material from tropical America and Africa, together with a considerable amount from the north temperate regions. This part of the herbarium is invaluable for the purpose of making comparative studies based on Philippine plants.

The Philippine collection is the largest and the most valuable extant, containing representatives of nearly all the species definitely known to grow in the Archipelago. It is rich in types and cotypes, containing well over a thousand of the former, and several hundred of the latter. The collections not only contain most of the recently collected Philippine material, but also valuable representations of earlier collections, such as those made by Cuming, Jagor, Loher, and others.

There are, moreover, several hundred specimens of the recent collections that have been critically compared with types preserved in European institutions. In many families most of the material has been exactly determined by European specialists.

The great bulk of the herbarium is made up of the phanerogamic collection, but the cryptogamic section includes exceedingly extensive collections, for the most part identified, of ferns and fern allies, as well as large collections of named mosses, scale-mosses, fungi, lichens, and algæ.

The botanical library is very extensive and contains a practically complete set of books applying to the flora of the Philippines and to the Indo-Malayan region as a whole. The list of general botanical publications is extensive, and the library is rich in sets of periodicals, proceedings of societies, etc.

The College of Agriculture at Los Baños is situated in a remarkably favorable spot for botanical work. The college buildings are at the very foot of Mount Maquiling, and not distant from the shore of Laguna de Bay.

Maquiling rises to a height of about 1,500 meters above the lake, and the trip to the summit and return can readily be made in a day. Within easy reach is the much higher mountain, Banajao. "From the lake to the mossy forest on the summit of Maquiling, every great tropical formation, except the mangrove and the alpine scrub, is present within convenient reach. Aside from the large number of introduced plants on the campus, there is an extraordinarily large local flora; and this vegetation never rests."

Chemistry.—The privileges of the excellent research equipment of the Bureau of Science and the facilities for advanced work offered by its staff and by the library are open to advanced students of chemistry who desire to complete their course for the degree of Doctor of Philosophy or wish to prepare a thesis on chemical subjects relating to the Tropics. The privilege of such study will be granted upon application to the Board of Regents for admission to the course and upon application to the director of the Bureau of Science for admission to the laboratories of the latter institution. The work of the Bureau of Science appears in the Philippine Journal of Science, which is published by the Bureau of Science of the Philippine Government, and investigators will be given every opportunity for carrying on their work and for publication. So many topics exist, which especially relate to conditions in the Tropics, that this opportunity offers a very enticing field to chemists desiring to broaden their training. Vacancies frequently occur in the chemical staff of the Bureau and properly qualified candidates would have an opportunity for such positions.

The library facilities for carrying on chemical research work are excellent.

Tropical Medicine.—Schools of tropical medicine have been established in various parts of the world, but many of them are in temperate climates, where actual contact with tropical diseases is difficult. The College of Medicine and Surgery supports a department of tropical medicine which is fully equipped and capable of offering facilities for study and research to medical men of other countries who desire to investigate the diseases of the tropics. Such visitors will be given every opportunity to use the laboratories of the Bureau of Science and of the College of Medicine and Surgery.

The wealth of clinical material available in the city of Manila and the resources of the hospital and of the Bureau of Science should prove extremely attractive to medical men from other countries.

Zoölogy.—The shores and waters of Manila Bay furnish a large amount of interesting zoölogical material. Extremely rich coral reefs are accessible by short steamer journeys. The Bureau of Science has large, well-classified, and fairly complete collections of Philippine birds, reptiles, fishes, and insects. The department of animal biology has a well-equipped laboratory, and the equipment of the zoölogical division of the Bureau of Science is also satisfactory.

ADMISSION

Applications for admission are received from four classes of candidates: (*a*) Persons who desire to begin, in some college of the University, a regular course of study leading to the degree conferred by that college; (*b*) students who, having already attended some institution of collegiate rank, desire advanced standing in a regular course in some college of the University; (*c*) special students, not candidates for any degree; (*d*) graduate students. The conditions of admission for these classes of persons are separately described on the following pages.

Every applicant for admission to the University of the Philippines, in case he has previously attended some other college or university without graduating from it, must file with the Registrar of the University a certificate of his honorable dismissal from that institution.

As evidence that they have satisfactorily pursued the subjects required for admission, candidates may take the entrance examinations given by the University (see next section), or may present certificates accepted by the University as equivalent for all or any part of their subjects.

For privileges extended to candidates presenting on admission more than the required amount of entrance subjects, see page 40.

ENTRANCE EXAMINATIONS

Examinations in all subjects required for admission to the University will be held at the College of Liberal Arts, Manila, P. I., June 17–22, 1912.

Permission to take these examinations must be secured from the chairman of the University Committee on Admissions. Permission should be obtained at least two weeks before the date of the examination to be taken. Permits will be sent by mail upon application. Candidates will be notified of the result of the examination.

No examination of candidates for admission will be held by the University at any other times or places than those announced in this catalogue.

University entrance examinations to the College of Medicine and Surgery for the graduating classes of the Government high schools will be held at the different schools in the month of March, 1912.

The hours for the University entrance examinations may be ascertained from the chairman of the Committee on Admissions.

Students deficient in any of the subjects required for admission who may, in spite of such deficiencies, be admitted to any college by the faculty concerned, *must make up all deficiencies within one year.*

SUBJECT-MATTER OF THE ENTRANCE EXAMINATIONS

ENGLISH

[5 units]

The examination will consist of two parts:

1. *English Rhetoric and Composition.*—The writing of compositions on assigned subjects designed to test the candidates' training in written expression. The examiner will consider particularly the following essentials: Spelling, punctuation, and use of capital letters; grammatical corrections; idiomatic use of words; structure of sentences and paragraphs. The examinations will be based on Lockwood and Emerson's Composition and Rhetoric.

2. *English Literature.*—(*a*) Ivanhoe and one of the plays of Shakespeare. The play selected for the entrance examination for 1912 is Julius Cæsar. (*b*) Garnett's English Prose; Selections XV, XVII, XX, XXII, XXIII, XXVII, XXXI, XXXIII; Webster's Bunker Hill Oration, and Vandyke's Essays of Emerson (Gateway Series). (*c*) Howe's Primer of English Literature. The candidate is not expected to have a minute knowledge of the subject-matter of the books set for entrance, and he may not offer mere knowledge as a substitute for the ability to write good English. His aim should be to acquire through his reading the power to express his own thought. He is expected, however, to have such general knowledge of the books and their important parts as would come from fresh and thoughtful reading, and to use this knowledge readily in the examination.

HISTORY

[3 units]

(*a*) *General History*, 2 units.—The essential features of Greek and Roman history; the outlines of ancient Oriental history; early Mediæval history to the death of Charlemagne; the rise and fall of the Holy Roman Empire, feudalism; the difference between Mediæval and Modern history; the elements of Modern history to the end of the seventeenth century. Text-book: Meyers' General History.

(*b*) *United States History and Government,* 1 unit.—From the European discovery of the new world, with especial attention to the development of the British Empire in America during the seventeenth and eighteenth centuries. After the Revolution, only the history and civil government of the United States should be studied. Text-book recommended: Thomas' United States History.

(*c*) *Colonial History and Government,* ½ unit.—A brief, concise summary of the history of colonization in ancient and modern times; the colonial possessions of great modern colonizing nations; the various forms of colonial government. Text-book: Reinsch, Colonial Government.

(*d*) *Civil Government,* ½ unit.—Text-book: Putney's Government in the United States, Bureau of Education Bulletin No. 10.

MATHEMATICS

[4 units]

Elementary Algebra, 1½ units.—A thorough knowledge of the four fundamental operations with rational expressions; factoring, including the determination of the highest common factor and the solution of equations; an elementary treatment of ratio and proportion; the binomial theorem for positive integral exponents (without proof) ; radicals, including the extraction of the square root of polynomials and of numbers; the solution of equations of the first degree (numerical and literal, integral, and fractional) involving one or more unknown numbers; easy quadratic equations, solved both by factoring and by completing the square; and simple cases of simultaneous equations, one of which is quadratic.

Emphasis should be laid, throughout the course, upon translating verbally stated problems into equations, solving these, and interpreting the results. Text-book recommended: Milne's High School Algebra.

Plane Geometry, 1 unit.—The used theorems and constructions contained in the best text-books on this subject, including the general properties of plane rectilinear figures, the circle and the measurement of angles, similar polygons, areas, regular polygons, and the measurement of the circle; the solution of original exercises, including loci problems, and the mensuration of lines and plane surfaces.

Of the preparatory work in mathematics two things are specially demanded:

(1) That it shall have developed in the student a certain degree of mathematical maturity, and familiarized him with the subject-matter and methods of mathematical work.

(2) That it shall have furnished him with those specific facts, an accurate and ready knowledge of which is indispensable in the prosecution of various professional studies.

The first of these demands is fairly well satisfied in the case of students who have conscientiously performed the mathematical work required for a diploma from one of our better high schools. A careful review of this part of the student's work, given immediately before entering the university, would give him a broader and more comprehensive knowledge, would make clear to him the reasons for many things which he did not understand when he first studied them, and would equip him with better and more rapid methods of work.

On the other hand, most students who fail in their university mathematics fail because they are poorly equipped in the second requirement above mentioned. They can not perform the ordinary operations of algebra either rapidly or accurately, they do not know the theory of quadratic equations, they are lost among trigonometric formulas, and they blunder when they use logarithms. Instead of spending their time and energy upon their new work, they are handicapped in reviewing those things with which they ought to be familiar, so that they can not keep up the pace set by men who are properly prepared, nor do the work that must be done to fit them for the professional work that follows.

It is not sufficient that the student should once have known his preparatory mathematics; he must know them at the time when he begins his work here. It seems absolutely essential, therefore, that these subjects be very carefully reviewed just prior to entrance.

A knowledge of the metric system of weights and measures is assumed in all the examinations in mathematics.

Solid Geometry, ½ unit.—The usual theorems and constructions contained in the best text-books on this subject, including the relations of planes and lines in space; the properties and measurement of prisms, pyramids, cylinders, and cones; the sphere and the spherical triangle; the solution of original exercises, including loci problems, and the mensuration of surfaces and solids.

Plane Trigonometry, ½ unit.—The definitions and relations of the six trigonometric functions as ratios; circular measurement of angles; proofs of the principal formulas, especially those for the sine, cosine, and tangent of the sum or difference of any two angles, and of double angles and half angles; the product expressions for the sum of two sines or of two cosines; the transformation of trigonometric expressions by means of these formulas, the use of inverse functions, and the solution of right and oblique triangles, together with simple applications.

Review of Arithmetic and Algebra, or Intermediate Algebra, ½ unit.

ECONOMICS

[1 unit]

Text-books recommended: Bullock, Elements of Economics; Barrows, Syllabus of Economics and Social Conditions in the Philippines.

LATIN

[2 units] [1]

1. *Latin Grammar and Composition,* 1 unit.—The inflections; the simpler rules for composition and derivation of words, syntax of cases and the verb; structure of sentences in general, with particular regard to relative and conditional sentences, indirect discourse, and the subjunctive;

2. *Cæsar and Composition,* 1 unit.—Any four books of the Gallic War (to be read with Greenough, D'Ooge, and Daniel's Second Year Latin).

3*a*. *Cicero,* ½ unit.—Six orations. The four against Catiline, for Archias, and one other.

3*b*. *Virgil,* ½ unit.—Any two books of the Iliad.

SPANISH

[2 units]

1. *Spanish Grammar and Composition,* 1 unit.—The rudiments of grammar, including the conjugation of the regular and the more common irregular verbs, the inflection of nouns, adjectives and pronouns, and the elementary rules of syntax; mastery of all but the rare irregular verb forms and of the simpler uses of the modes and tenses; exercises containing illustrations of the principles of grammar; practice in translating Spanish into English, and English variations of the text into Spanish.

2*a*. *Elementary Spanish Literature,* ½ unit.—The reading and accurate rendering into good English of from 200 to 250 pages of graduated texts, with translation into Spanish of easy variations of the sentences read.

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[1] Both Latin and Spanish are not required for entrance. Two units of either may be offered.

2*b*. *Advanced Spanish Literature*, ½ unit.—The reading, in addition to the elementary work, of from 400 to 500 pages of modern prose from different authors (a total, with the elementary requirement, of 600 to 750 pages).

PHYSIOGRAPHY

[½ unit]

The study of physiography or physical geography should occupy five periods a week for one half year. In order to attain the best results, a considerable portion of the time should be spent in making observations and sketches in the field. Special attention should be given to the action of atmospheric agents upon the earth and to local meteorology.

The examination is intended to test the student's knowledge of the various agencies and forces which affect the surface of the earth, rather than to emphasize a mass of more or less isolated facts.

COMMERCIAL GEOGRAPHY

[½ unit]

As outlined by the 1911 bulletin on the secondary course of study, issued by the Director of Education.

PHYSICS

[1 unit]

Students offering physics for entrance must show an acquaintance with the more important phenomena and with the principles involved in their explanation. They must, in addition to a year's work with the text-book, have completed a year of laboratory practice and must be prepared to work simple numerical problems upon the laws of falling bodies; upon the pendulum; upon properties of liquids and gases, including the determination of density; upon thermometry and calorimetry, including specific heats of fusion and liquefaction; upon the relations of current and electromotive force and resistance; upon velocity, wave length, and resonance in sound; upon refractive indices, focal lengths, and the size and position of images in optics. The student must understand and be able to use the metric system in measurement and computation.

The laboratory work offered should be chiefly quantitative in character, and should consist of at least forty exercises or experiments of the character given in Nichols' "Outlines of

Physics," or other works similar to this in grade and method. *The laboratory work prescribed above must have been performed by the student individually, in evidence whereof he must present his laboratory notebook at the time of examination. He must, moreover, be prepared to describe intelligently the method pursued and the results obtained in the experiments which he has performed.*

ZOOLOGY

[1 unit]

Elementary zoölogy should be a study of the natural history, external characters, and relationship of animals, not a course in anatomy. Students ought to make a collection of at least 200 species of insects, representing not less than 12 orders, and of 100 species belonging to other classes than insects. The student should classify his collection as far as the orders. It should be born in mind that no text-book exists which is adapted to Philippine zoölogy, and therefore the adopted text must be a guide to work and not followed slavishly. The collection should serve as a basis for observation on habits, environment, and adaptations, and also furnish part of the material needed for detail laboratory study. The course should occupy five double periods a week for one year, divided as follows:

Invertebrate Zoölogy (28 weeks).—Three laboratory periods per week should be devoted to the observation of living and preserved forms, and to a limited amount of dissection.

This laboratory practice should at least include a study of all of the following: Amœba, vorticella, paramœcium, euglena, sponge, sea anemone, jelly-fish, coral, liver-fluke, tapeworm, ascaris, hookworm, lingula, starfish, brittle-star, sea urchin, sea cucumber, earthworm, leech, prawn, crab, hermit-crab, barnacle, cyclops, locust, cockroach, mantid, dragon fly, electric-light bug or squash bug, scale, cicada, fly, mosquito, butterfly, coconut beetle, wasp, ant, termite, scorpion, spider, tick, centipede, clam or mussel, snail or slug, squid.

Vertebrate Zoölogy (12 weeks).—A study of the external characters, classification, geographical distribution, and natural history of fish, amphibia, reptiles, birds, and mammals, with a special consideration of Philippine forms. Dissection should be limited to one form, either a fish, lizard, or rat.

The candidate must present his laboratory notebook, certified by the teacher of the course, at the time of the examination. Text recommended, Linville and Kelly, Elementary Zoölogy.

BOTANY

[1 unit]

Students offering botany for an entrance subject should have devoted at least five periods a week for one year to a course equivalent to that outlined by Copeland in Bulletin No. 24 of the Bureau of Education. Of this time two or more periods each week should be double periods given to laboratory or field work. It is very advisible that five double periods per week be assigned to the subject.

In the laboratory and field work careful notes and drawings should be made. These should be made directly from plants. In the preparation of an herbarium of fifty species or more, the student should distinguish clearly between notes obtained in the field and from the plants, and information from lectures and books.

The candidate must present his laboratory notebook, certified by the teacher of the course, at the time of the examination.

LABORATORY NOTEBOOKS

A notebook containing the student's own record of his laboratory experiments, written up in the laboratory, must be presented at the time of the examination. Upon the cover of every notebook presented there should be attached a statement, signed by the teacher, similar in form to that given below:

> I hereby certify that the accompanying notebook is the original record of the experiments performed by .... in the .... laboratory of the .... School.

The notebook will be returned to the candidate upon application at any time within one year after the examination.

REQUIRED ENTRANCE SUBJECTS

	Units.
English	4
History	2
Mathematics	3
Latin or Spanish	2
Botany	1
Physics	1
Total	13

Seventeen units are required for entrance to the collegiate departments of the university. Such subjects as colonial history and government, zoölogy, chemistry, solid geometry, plane trigonometry, French, German, advanced Latin or Spanish, may be offered as optional entrance subjects.

SCHOOL CERTIFICATES

Certificates of work done in public and private schools, in or out of the Philippine Islands, may be accepted in lieu of examinations for subjects covered by the certificates, but only on condition that the applicant has completed a full course, has been duly graduated after at least one year in the school, and the university authorities are satisfied regarding the standing of the school.

The application for the admission of a student by certificate must give the grades received by the student for the secondary school subjects, and must be indorsed by the principal of the school.

This application must be accompanied by full and specific information with regard to the completeness and thoroughness of the studies and courses in which instruction is given. In case a catalogue or circular is published, a copy thereof should also be furnished.

For the present, certificates will be accepted from provincial high schools giving a complete four-year course, according to the outline of courses published by the Director of Education, and those schools which are certified by the Secretary of Public Instruction as doing work of an equal standard: *Provided that*—

(1) The status of every undergraduate student is probationary during his first year of residence in the University, and his final allowance of matriculation credit will depend upon his work during this probationary year.

(2) The scholarship records in the University of the Philippines of the first-year students, from each of the accredited schools, will be kept in such a way as to show the standing of the school in scholarship, as reflected by its representatives in the university. This record will be made use of in determining the status of the school as a possible candidate for future accrediting.

(3) The University does not engage in advance to always accept the certificates of any school. The previous acceptance of such certificates merely raises the presumption that similar certificates may be accepted again, but does not establish a permanent right to such acceptance. Certificates from schools whose students prove to be imperfectly fitted will ultimately not be considered.

(4) *Until 1913 no student will be admitted to the College of Medicine and Surgery without taking a complete entrance examination.*

Recommended graduates of secondary schools who wish to postpone their entrance to the University should send their recommendations, with a specific request for extension, to the Registrar of the University. Extension may be granted for one year, with the possibility of renewal, upon request. Recommendations become invalid if not presented within twenty months after graduation.

GENERAL PROVISIONS

All diplomas, certificates, and statements offered in lieu of University entrance examinations should be sent by mail to the Registrar of the University, as early as possible in the summer before the opening of the school year; and to insure consideration, should reach him at least by the 15th of May.

Application for credit in all subjects for which credit is desired must be made at the time of the admission of the applicant; it should not be postponed to any later date in his course, and no certificate will be considered after the end of the first semester of attendance.

Certificates are accepted for the subjects of physics, botany, and zoölogy only on condition that the applicant shall send to the Registrar his notebook, with the teacher's statement attached, as described in the foregoing account of the University entrance examinations in these subjects.

The notebook will be returned to the candidate upon application at any time within one year.

SURPLUS ENTRANCE CREDIT

Applicants for admission who pass examinations or present acceptable certificates in more subjects than are required by the college to which they are admitted, will not receive surplus entrance credit for such subjects, unless the faculty is satisfied that the work done is equal to the standard required in its own college. Under no circumstances will entrance credit in physics, chemistry, physiography, or biology, carry with it university credit in any course in those subjects.

ADMISSION TO ADVANCED STANDING

A student who, having already attended some college or university, desires advanced standing in a regular course in some college of the University of the Philippines, should consult the directions given in this catalogue under the college in question, and should forward to the dean of the college at as early a date as possible an official certificate from the college or university already attended, of (1) his honorable dismissal, (2) his entrance examinations in detail, (3) his terms of attendance and the amount of work which he has completed, and (4) a detailed statement of the courses pursued for which he desires credit. He should send also a catalogue of the institution, writing on it his name, and marking the entrance requirements which he has satisfied and each subject which he has completed.

ADMISSION OF SPECIAL STUDENTS

Persons of the requisite age may be admitted as special students, without examination, provided they give evidence of ability to do special work in the University, they must be recommended for admission by the University Committee on Admission and to the faculty concerned by the professor in charge of the department of study in which they desire to take a large part of their work. The recommendation of a special student for admission is referred to a committee for provisional acceptance before final ratification by the faculty concerned. Such students may graduate in any of the courses, on condition of passing all the required examinations, including those for admission. They are not permitted to make up deficiencies in entrance subjects by attending university instruction in those subjects, but are required to take the necessary instruction outside of the university. Special students are subject to the same regulations in regard to examination and number of hours as students in the other courses.

REGISTRATION EACH SEMESTER

At the beginning of every semester each student must obtain a certificate of registration from the registrar, and no student, after being once admitted to the university, will be allowed to register after the close of the registration period, except by special permission of the faculty concerned.

REGISTRATION OF STUDENTS

Students in all undergraduate courses register for the work in each college at the time prescribed by their college. No credit will be allowed for work not so registered. To promote prompt registration, a fee of ₱5 is charged those who seek to register later than the specified date of registration unless previously excused by the President of the University. Changes in registration will not be allowed except by special permission of the faculty concerned, in which case any registration will be subject to a fee of ₱5.

No person will be admitted as a student to the exercises of any professor or instructor, except as authorized by the official certificate of registration furnished to each student by the dean or registrar, subject to the approval of the proper adviser.

Every student is required to attend all his class exercises and to satisfy the instructor in each of his courses of study, in such way as the instructor may determine, that he is performing the work of the course in a systematic manner.

Any instructor, with the approval of the dean may at any time exclude from his course any student who, in his judgment, has neglected the work of the course. Any student thus excluded shall be recorded as having failed in the course of study from which he is excluded, unless the faculty shall otherwise determine.

CREDIT

One university hour of credit is one lecture or recitation each week for the period of a complete semester.

In all courses, two and a half to three hours of laboratory work, and, in the technical courses, three hours of drafting or shopwork, are regarded as the equivalent of one recitation or lecture.

FEES AND TUITION

A tuition fee of ₱75 a year is charged by the College of Law. No other colleges charge for tuition.

Each student (except in the College of Agriculture) will be required to deposit ₱10 in addition to the regular fees with the registrar on matriculation. This deposit is for the purpose of covering any losses of apparatus, supplies, books, etc., or any damage to university property which may properly become a charge against the students.

In the College of Agriculture each student will be required to make a deposit of ₱15, with the exception of "pensionados" and those supporting themselves by rendering service to the college.

A fee of ₱5 per semester may be charged in all laboratory or technical courses, giving three units of credit for a semester, and ₱10 per semester in those giving more than three units credit for a semester.

An athletic fee of ₱1 per semester is charged every student in the Colleges of Liberal Arts, Medicine and Surgery, Engineering, Veterinary Science, and Law.

GRADES OF SCHOLARSHIP

The results of examinations, together with term work when a record of the latter is kept, will be ranked and reported in five grades, 1, 2, 3, 4, 5. The first grade denotes marked excellence. The second grade indicates that the student's work has been thoroughly satisfactory. The third grade denotes a pass. Courses in which students have obtained a fourth grade will not be credited to them, except upon the condition of passing a second examination. The fifth grade indicates failure and the necessity of repeating not only the examinations of a course, but also the regular work. The report in case of absence from an examination, or of failure to perform any of the allotted work in a given course, is *incomplete.* Work so reported must be made up within a year.

The entrance examinations are ranked and reported in five grades, corresponding with the five grades used for reporting upon university courses. In the case of entrance examinations, neither a fourth grade (condition) nor a fifth (failure) may be removed by passing a second examination.

Second examinations are permitted only for the purpose of removing deficiencies. Students who have received second grade or third grade in a given course are not allowed such examinations for the purpose of improving their grade.

CONDITIONS AND FAILURES

For the removal of conditions, students shall have the privilege of taking the regular mid-year or annual examinations in the subjects in which they are conditioned. Examinations may be held at other times only by the special permission of the faculty and on payment of a fee of ₱10.

Opportunity for the removal of matriculation deficiencies is offered each year at the time of the entrance examinations.

Any undergraduate student who is reported as having failed in a course, or who, after being conditioned, does not pass a second examination for the removal of the condition, will be required to repeat every such deficient subject with the class that next takes it; unless, on recommendation of the officer of instruction in charge, the faculty shall permit him to review a subject in which he is thus deficient with the assistance of an acceptable private tutor; in which case he will be excused from attending the recitations, but will be required to take the regular examinations at the end of the year or half year.

No student will be recommended for a degree until all deficiencies incurred at any time during the course have been finally and satisfactorily removed, and the Registrar's report shows a completely clear record. All examinations of candidates must have been passed prior to the meeting of the university council appointed for recommending candidates for degrees.

LEAVE OF ABSENCE AND HONORABLE DISMISSAL

Prolonged leave of absence must be sought by written petition to the proper faculty, and the petition must specify the length of time (not more than a year) and the reason for which the leave is desired. An indefinite leave of absence will in no case be granted.

A student must apply for leave to be absent, or for an excuse for having been absent from any college exercise other than an examination, to the officer of instruction in charge of such exercise; unless, for unavoidable cause, the student is obliged to absent himself from all college exercises for one day or for several days, in which case the dean will issue a written excuse for leave. Leave to be absent from an examination must be sought by written petition to the proper faculty.

Leave to be absent on an excuse for absence does not, in any case, absolve the student from doing the work covered by his class during his absence, to the satisfaction of the instructor in charge.

Students who discontinue their work without formal leave of absence do so at the risk of having their registration privileges curtailed or entirely withdrawn.

Honorable dismissal, indicating that the student, while in good standing, has voluntarily severed his connection with the university, should be sought by written petition to the proper faculty. Without such petition, no record of honorable dismissal will be made.

EXPENSES

The expense of text-books, instruments, etc., varies from ₱25 to ₱75 per annum.

The cost of living in Manila varies from ₱5 to ₱10 per week.

A fair estimate of the yearly expenses is from ₱250 to ₱500, but much depends on the personal tastes of the student.

ATHLETIC ASSOCIATION OF THE UNIVERSITY OF THE PHILIPPINES

Every student of the Colleges of Liberal Arts, Medicine and Surgery, Engineering, Veterinary Science, and Law, will pay an athletic fee of ₱1 per semester, which will be turned into the treasury of the Athletic Association.

Each student of these colleges becomes, upon payment of this fee, a member of the Athletic Association. Payment of the fee entitles the students to admission to all university athletic contests. The government of this association is vested in a board of control, which shall consist of a president, a secretary-treasurer, and one member, elected by the university council, who shall be members of the faculty of the university, and three student representatives from the colleges of the university, elected by the association. The board of control shall supervise the management and finances of every athletic organization representing the university.

The board of control shall supervise the management and finances of every athletic organization representing the university.

DEGREES

FIRST DEGREES

The degrees of Bachelor of Arts, Bachelor of Laws, Bachelor of Agriculture, Bachelor of Science in Agriculture, Bachelor of Science in Forestry, and Doctor of Veterinary Medicine are conferred after the satisfactory completion of the respective courses.

The single degree of Bachelor of Arts will be conferred on students in the College of Liberal Arts.

SECOND DEGREES

The degree of Master of Arts will be granted upon graduation from a three years' course of specialized study in the senior college of the College of Liberal Arts.

The degree of Civil Engineer will be granted upon graduation from a four years' course in the College of Engineering.

The degree of Doctor of Medicine will be granted upon graduation from a five years' course, and the degree of Doctor of Public Health after a further course of two years' graduate study in the College of Medicine and Surgery.

THE UNIVERSITY OF THE PHILIPPINES

THE COLLEGE OF LIBERAL ARTS

SECOND ANNUAL ANNOUNCEMENT AND CATALOGUE

Faculty of the College of Liberal Arts

MURRAY BARTLETT,
President of the University.

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. D.,
Associate Professor of Zoology; Dean of the College of Liberal Arts.

PAUL CASPAR FREER, M. D., Ph. D.,
Professor of Chemistry.

VICTOR GEORGE HEISER, B. A., M. D.,
Professor of Hygiene.

VERNON LEE ANDREWS, M. D.,
Associate Professor of Pathology and Bacteriology.

WILLIAM JOSEPH COLBERT, B. A.,
Associate Professor of Mathematics.

HARRY DRAKE GIBBS, B. S.,
Associate Professor of Chemistry.

CARROLL FOX, M. D.,
Associate Professor of Hygiene.

ELMER DREW MERRILL, B. S., M. S.,
Associate Professor of Botany.

ALFRED OGLEE SHAKLEE, B. S., M. D.,
Associate Professor of Pharmacology.

JAMES REMUS WRIGHT, B. S., Ph. D.,
Associate Professor of Physics.

RHEINHART PARKER COWLES, B. A., Ph. D.,
Assistant Professor of Zoology.

DEAN SPRUILL FANSLER, B. A., M. A.,
Assistant Professor of English.

HARRIOTT ELY FANSLER, B. A., M. A.,
Assistant Professor of English.

MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S.,
Assistant Professor of Chemistry.

WALTER ROBERT SHAW, B. A., M. A., Ph. D.,
Assistant Professor of Botany.

JOHN A. CHRISTENSEN,
Instructor in Business Arithmetic and Methods.

THOMAS JOSEPH FREEMAN, B. A.,
Instructor in French and Mathematics.

ROY HAMMACK, M. D.,
Instructor in Pathology and Bacteriology.

PERRY COLEMAN HAYS, LL. B.,
Instructor in History and Government.

WILLIAM TATUM HILLES, B. A., M. A.,
Instructor in Spanish.

JOSE PETRONIO KATIGBAK, B. A., B. S.,
Instructor in Graphics.

AMBROSIO MAGSAYSAY, C. E.,
Instructor in Graphics.

SALVADOR VIVENCIO DEL ROSARIO, B. A., M. D.,
Instructor in Hygiene.

CHARLOTTE ELIZABETH NEALE, B. L.,
Instructor in History.

ALICE JOSEPHINE O'MALLEY, B. A.,
Instructor in Latin.

JOSE IGNACIO DEL ROSARIO, B. A., M. A.,
Instructor in Chemistry.

RANDALL ADAMS ROWLEY, B. S.,
Instructor in Geology.

ALEXANDER EDWARD WROTTESLEY SALT, B. A., M. A.,
Instructor in History and Economics.

OTTO JOHNS SCHEERER,
Instructor in German.

ROY STANLEY SWINTON, B. C. E.,
Instructor in Physics and Surveying.

LAWRENCE DILLER WHARTON, B. A.,
Instructor in Zoology.

JOSE HILARIO, M. D.,
Demonstrator in Pathology and Bacteriology.

DANIEL DE LA PAZ, M. D.,
Assistant in Pharmacology.

JAMES ALEXANDER ROBERTSON, Ph. B., L. H. D.,
Lecturer on Philippine History and Government.

COLLEGE OF LIBERAL ARTS

THE JUNIOR COLLEGE

The Board of Regents, on June 6, 1910, authorized the granting of the Bachelor's degree in this college on the completion of two years of college work. Provision was also made on January 30, 1911, for granting the Master's degree to holders of the Bachelor's degree on the completion of three additional years of more specialized and advanced study.

The College of Liberal Arts not only offers courses to those who seek culture and breadth of education but gives courses preparatory to the work of the professional schools (see pp. 70–72). It also makes provision for special students who are not candidates for degrees.

The requirements for the Bachelor's degree in the undergraduate or junior college department of this college is the completion of at least 68 units or semester hours selected with the assistance of a faculty adviser from five groups, as indicated below. In the case of the special courses preparatory to law, medicine, engineering, and pharmacy, more than 68 units may be required. Students who register for any of the special courses offered by the College of Liberal Arts will not be allowed to change to another course during that school year.

The courses offered in the University to candidates for the Bachelor's degree are grouped as follows:

Group.	Course.	Group.	Course.	Group.	Course.
I	English.	III	Botany.	V	Philosophy.
II	Latin.		Zoölogy.		History.
	French.		Chemistry.		Political science.
	German.		Geology.		Economics.
	Spanish.		Physics.		Sociology.
		IV	Mathematics.		

DEPARTMENTS OF INSTRUCTION

DEPARTMENT OF ENGLISH

DEAN SPRUILL FANSLER, B. A., M. A., Assistant Professor of English.
HARRIOTT ELY FANSLER, B. A., M. A., Assistant Professor of English.

English 1 and 2. Composition.—A practical course in writing and speaking English. One day a week is devoted to a study of idiom and to the correction of typical errors in English; and one day to oral expositions of assigned topics, accompanied by written themes, which are carefully criticised for form, diction, and content; and, having been corrected by the students, are subsequently returned to the instructor. In addition to the weekly themes at least six long compositions will be required of each member of the class during the year.

This course is prescribed for all first-year students in the College of Liberal Arts.

[3 hours throughout the year; 6 units.

English 3 and 4.—A course meeting once a week throughout the year. The work assigned will be such as to meet the individual needs of the students. *This course is prescribed for all second-year students in the College of Liberal Arts not taking any other course in English.*

[1 hour throughout the year; 2 units.

English 5 and 6. Composition and Literature.

Composition.—First semester: A study of paragraphs and the methods of development. Oral composition based on the history of early English literature. Weekly written themes of simple original criticism of subjects pertaining to national literature and tradition.

Second semester: A study of poetic and dramatic writing. Oral composition based on the history of English literature from Wordsworth to the present day. Weekly written themes on subjects of general interest; in addition to which, each student will prepare and deliver before the class at least two extended talks on appointed topics.

Literature.—English prose from Bacon to Stevenson. Goldsmith's She Stoops to Conquer, and one play of Shakespeare are read critically and discussed. Besides the work outlined above, the following outside reading is required: Idylls of the King; two novels from a prescribed list; a comedy, tragedy, historical play, and one of the so-called tragi-comedies, of Shakespeare; two sets of essays; two literary biographies.

[3 hours throughout the year; 6 units.

English 7 and 8. History of English Literature.—A general survey of the development of English literature from Beowulf to the Victorian Era. An historical outline, supplemented by the study of representative works. Lectures on the great movements and influences of English literature. Weekly reports based on assigned reading will be required of each member of the class.

[3 hours throughout the year ; 6 units.

English 9 and 10. General Literature.—The aim of this course is to acquaint the student with the great works of literature.

[3 hours throughout the year ; 6 units.

English 11 and 12. Forensic Logic and Argumentation.—First semester: A historical study of the forum and its masters, of schools of logic, and of the technique of proof, combined with practice in written argument.

Second semester: Analysis of great pieces of argumentation; practice in writing briefs; the delivery of at least two original speeches by each member of the class. Lectures, conferences, debates.

[3 hours throughout the year ; 6 units.

DEPARTMENT OF FRENCH

THOMAS JOSEPH FREEMAN, B. A., Instructor in French.

French 1 and 2. Elementary French.—Pronunciation; elementary rules of grammar with oral and written exercises to illustrate their application; translation and sight reading of simple French prose.

Text-book: Fraser and Squair, French Grammar.

[3 hours throughout the year ; 6 units.

French 3. Intermediate French (prerequisite, French 1 and 2).—Grammar and composition; translation and sight reading of French prose of intermediate grades.

[3 hours, first semester ; 3 units.

French 4.—Grammar and composition continued; practice in writing French; translation and sight reading of French prose of a more difficult grade.

[3 hours, second semester ; 3 units.

French 5 and 6. Third-Year French.—Review of grammar; translation of French prose and poetry from the best authors.

[3 hours throughout the year ; 6 units.

DEPARTMENT OF GERMAN

OTTO JOHNS SCHEERER, Instructor in German.

German 1 and 2. Elementary German.—The aim of the course is to enable students to use the German language (*a*) in answering questions concerning the contents of and the elements of grammar in an easy piece of reading; (*b*) in writing a simple letter, a description of an object in view, or a similar easy composition; (*c*) in translating from easy English.

Text-book: Berlitz, First Book; Wormann, Complete German Grammar; Gürber, Märchen und Erzählungen; Wenkebach, Glück Auf.

[3 hours throughout the year; 6 units.

German 3 and 4. Intermediate German.—A preparatory course for the reading of literary and scientific authors. Class and outside reading of selected texts. German reviews and periodicals introduced. Reports and discussion in German on reading matter. A progressive course in composition and letter writing.

Text-book: Wormann, Complete German Grammar.

[3 hours throughout the year; 6 units.

German 5 and 6. Advanced German.—A summary view of the history of German literature will be given. One of Schiller's dramas will be read in class. Outside reading will be assigned to students in connection with their special lines of study, on which oral and written reports will be made. Difficult points in German grammar will be reviewed, with the aid of Wussmann's "Allerhand Sprachdummheiten."

[3 hours throughout the year; 6 units.

NOTE.—The courses will be conducted throughout in German. The prerequisite for German 3 and 4 is the full attainment of the aim indicated under German 1 and 2.

DEPARTMENT OF LATIN

ALICE JOSEPHINE O'MALLEY, B. A., Instructor in Latin.

Latin 1 and 2. Elementary Latin.

[3 hours throughout the year; 6 units.

Latin 3 and 4. Intermediate Latin.—An intensive study of the following orations of Cicero: In Catilinam, Pro Archia, Pro Lege Maniliana: Latin prose composition based on the selected orations.

[3 hours throughout the year; 6 units.

Latin 5 and 6. Advanced Latin.—Virgil, Livy. For 1912-1913 the following will be read: Virgil, Aeneid, Books I-IV. Livy, Books XXI and XXII. Particular attention will be given to scansion and prose composition.

[3 hours throughout the year; 6 units.

Latin 7 and 8.—Odes and Epodes of Horace; Letters of Pliny; Satires of Persius and Juvenal.

[3 hours throughout the year; 6 units.

DEPARTMENT OF SPANISH

WILLIAM TATUM HILLES, B. A., M. A., Instructor in Spanish.

Spanish 1 and 2. Elementary Spanish.—Grammar: One period a week. Based on Loiseaux's Elementary Spanish Grammar as a text-book, but with considerable additional material given in class.

Composition: One period a week, except during the first two months when grammar work will be substituted. Brief composition exercises will also be written in connection with the grammar lessons. Loiseaux's Spanish Composition will be used as a text-book.

Reading: One period a week. The following texts will be read: Loiseaux, Elementary Spanish Reader, and Valdés, Capitán Ribot.

[3 hours throughout the year; 6 units.

Spanish 3 and 4. Intermediate Spanish.—General view of Spanish literature. At the beginning of the year a few exercises in the translation of English into idiomatic Spanish will be required, in order to eliminate from the class those who have not yet acquired a satisfactory command of the language. Thereafter a study will be made of the literature rather than of the language.

The work will comprise translation, interpretation, questions in grammar based on the text, and historical matter contained in the texts and introductions. Lectures will be given on the development of Spanish literature, introduced by a brief survey of Spanish history. Assignments will be made to individual students for original investigation and reports in class.

The following texts will be read in class: Alarcón, El Capitán Veneno; Valdés, José; Echegaray, El Gran Galeoto; Moratin, El Sí de las Niñas; Calderón, La Vida es Sueño; one of Cervantes' Novelas Ejemplares; and a play by Lope de Vega.

For outside reading: One volume of Alarcón's Novelas Cortas; Galdós' Doña Perfecta; two more of Cervantes's Novelas Ejemplares; and another play by Lope de Vega. The books read during the first semester all belong to the nineteenth century, the more difficult texts of the earlier periods being taken up the second semester.

[3 hours throughout the year; 6 units.

Spanish 5 and 6 (prerequisite, Spanish 3 and 4).—The Golden Age in Spanish literature. Rapid reading in Spanish of some of the classics of this period, with interpretation of difficult passages. Such texts as the following will be used: Ford's Spanish Anthology, La Celestina, La Propaladia, La Vida de Lazarillo de Tormes, Ford's Selections from Don Quijote, and several plays by Lope de Vega.

Individual assignments will be given for detailed reports on various special topics; Ticknor's History of Spanish Literature and Rennert's Life of Lope de Vega will be used as reference books. In addition, the following texts will be assigned for home reading: G. de Castro, Las Mocedades del Cid; Tirso de Molina, Don Gil de las Calzas Verdes; Moreto, El Desdén con el Desdén; Calderón, El Mágico Prodigioso.

[3 hours throughout the year; 6 units.

DEPARTMENT OF BOTANY

ELMER DREW MERRILL, B. S., M. S., Associate Professor of Botany and Acting Chief of Department.

WALTER ROBERT SHAW, B. A., M. A., Ph. D., Assistant Professor of Botany.

Courses in botany will be offered to meet the needs of (*a*) students preparing to become teachers of biological sciences in the high schools of the Philippines: (*b*) students in the course in pharmacy; (*c*) students desiring work in science without reference to special application in their chosen fields of labor.

For those intending to teach high-school botany two semesters of work will be given in the first year of the college course. This will be followed by 20 unit hours of botany courses to be taken during the third and fourth years of the college course, to include a thesis to be prepared in the final year, and to lead to the degree of Master of Arts. Approved field work during a major portion of two vacations will be a requirement for this degree. The completion of a high-school course including a year of work in botany is a prerequisite to admission to any of these courses as a candidate for the advanced degree. The flora of Manila affords at all seasons an abundance of fresh material for the study of tropical plants, and the climate permits, with a minimum of difficulty, the cultivation of material under controlled conditions for study in the laboratory, under glass, and in the garden.

For students of pharmacy one semester of work will be offered in the first year (see p. 79). This is to be followed by courses in pharmacography and pharmacognosy in the second and third years.

Botany 1 and 2. The Natural History of Plants.—A course designed for those students who are not sufficiently prepared to take Botany 3 and 4, to include the elements of botany.

[9 hours throughout the year; credits for entrance units only.

Botany 3 and 4. Morphology and Classification of the Vascular Plants.—A course designed primarily for students of pharmacy. Special attention will be given to the study and classification of the local flora, the lectures and laboratory work to be supplemented by studies in the field and in the herbarium, including the preparation of a small herbarium by each student. Selected types of plants of economic importance as the source of drugs, etc., will be studied intensively. One object of the course is to give students of pharmacy a broad conception of the principles of taxonomy, and the relationships of various groups of plants, as a basis for future work in botany and pharmacognosy.

Text-book: Kraemer, Botany and Pharmacognosy.

[9 hours throughout the year; 6 units. Associate Professor **Merrill**.

Botany 6. Elementary Plant Physiology.—Laboratory and field work with reading and occasional lectures on the physiology of vascular plants. A course designed to supplement the high-school course in botany. Open to students who have had high-school botany or Botany 1 and 2.

Text-book: Coulter, Barnes and Cowles, Textbook of Botany, Part II.

[6 hours, second semester; 3 units. Assistant Professor **Shaw**.

Botany 7. Plant Morphology.—First semester: Morphology and classification of the algæ, fungi, liverworts, and mosses. Types of the principal groups will be studied in the laboratory. Lectures giving an outline of the classification of the groups and a discussion of their origin.

Botany 8. Plant Morphology.—Second semester: Morphology and classification of the ferns, fern-allies, and seed plants. A study of the life histories of a few representatives of groups of vascular plants, including fertilization and pollination and the development of organs and tissues. Lectures on the morphological homologies and the phylogeny of the groups.

Text-book: Coulter, Barnes and Cowles, Textbook of Botany, Part I.

[9 hours throughout the year; 6 units. Assistant Professor **Shaw**.

Botany 9 and 10. Vegetable Histology and Pharmacognosy.—About one-third of the first semester will be occupied with general histology of the vegetative structures of seed plants. The remainder of the year will be devoted to a study of crude vegetable drugs of the United States Pharmacopœia. The roots, rhizomes, tubers and bulbs will be taken up in the first semester, and in the second semester the woods, barks, leaves and leaflets, herbs and flowers. Each student will be provided with a compound microscope for use in the laboratory. Identification will receive careful attention, and there will be frequent tests of ability to determine drugs. Lectures on the main facts of the pharmacography of each drug.

Text-book: Kraemer, Botany and Pharmacognosy.

[9 hours throughout the year; 6 units. Assistant Professor SHAW.

Botany 11. Pharmacognosy (not given until 1913).—A study of the fruits, seeds, and miscellaneous crude vegetable and animal drugs of the United States Pharmacopœia.

[9 hours, first semester; 3 units.

Botany 12. Pharmacognosy; Powdered Drugs and Foods (not given until 1913).—Microscopical examination of the more important powdered drugs and foods. Practice in the determination of unknown powders and the recognition of adulterants.

[9 hours, second semester; 3 units.

DEPARTMENT OF CHEMISTRY

PAUL CASPAR FREER, M. D., Ph. D., Professor of Chemistry and Chief of Department.
HARRY DRAKE GIBBS, B. S., Associate Professor of Chemistry.
MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S., Assistant Professor of Chemistry.
JOSE IGNACIO DEL ROSARIO, B. A., M. A., Instructor in Chemistry.

For the present the chemical work of the University is carried on in the new chemical laboratories of the College of Medicine and Surgery. The desks, apparatus, and equipment are of the most modern type and the facilities for work are excellent.

Chemistry 1 and 2. General Inorganic Chemistry.—Lectures, recitations, and laboratory work.

[9 hours throughout the year; 6 units.
Associate Professor GIBBS.
Assistant Professor DEL ROSARIO.
Mr. JOSÉ I. DEL ROSARIO.

Chemistry 3 and 4. General Organic Chemistry.—Lectures, recitations, and laboratory work.

[9 hours throughout the year; 6 units.
Associate Professor GIBBS.
Assistant Professor DEL ROSARIO.

The above-described four courses are prerequisite to all the following courses:

Chemistry 5. Qualitative Analysis, Inorganic.—Lectures, recitations, and laboratory work.

[7 hours, first semester; 3 units. Assistant Professor DEL ROSARIO.

Chemistry 6. Quantitative Analysis, Inorganic.—Lectures, recitations, and laboratory work, including the principles of gravimetric and volumetric analysis.

[7 hours, second semester; 3 units. Assistant Professor DEL ROSARIO.

Chemistry 7. Physiological Chemistry.—This course will include quantitative examinations of milk, urine, and other products of vital processes. Lectures, recitations, and laboratory work.

Required of all students in the College of Medicine and Surgery.

[7 hours, first semester; 3 units. Assistant Professor DEL ROSARIO.

Chemistry 9 and 10. Principles of Chemistry.—A lecture course, accompanying Chemistry 5 and 6.

[2 hours throughout the year; 4 units. Professor FREER.

Chemistry 1 and 2 in the first year, Chemistry 3 and 4 in the second year, Chemistry 5-10 in the third year make up the work of the first three years in chemistry and pharmacy. The courses of the fourth and fifth years necessary to complete the requirements for a Master's degree in chemistry will be outlined as the needs arise.

DEPARTMENT OF GEOLOGY

RANDALL ADAMS ROWLEY, B. S., Instructor in Geology.

Geology 1 and 2. Elementary Geology (prerequisite, Chemistry 1 and 2).—A general course, involving a study of geological processes, with special emphasis on those which have been important in the geological history of the Philippines. Under this head are taken up the atmosphere as a geological agent, the work of running water, the work of ground water, the work of the ocean, structural geology, movements and deformation of the earth's body, vulcanism, and the geological functions of plants and animals. An elementary treatment is given of the origin and descent of rocks, the work of snow and ice, the hypotheses of earth's origin, earth history, and economic geology. Students are given some practice in interpreting topographic maps.

Text-book: Chamberlin and Salisbury, Geology (3 vols.), The following works may also be used for reference: Dana, Manual of Geology; Geikie, Manual of Geology; Russell, Rivers of North America.

[3 hours a week throughout the year; 6 units.

Geology 3. Elementary Geology.—A short course in dynamic and structural geology, especially adapted to meet the needs of students of engineering. The course is also open to any other students of the University having an equivalent preparation.

[3 hours, first semester; 3 units.

Geology 4. Mineralogy (prerequisite, Chemistry 1 and 2).—A detailed study of the chemical and physical properties of common rock-making minerals and of some of the rare minerals of economic importance.

Text-book: Brush and Penfield, Manual of Determinative Mineralogy and Blowpipe Analysis.

[6 hours, second semester; 3 units.

DEPARTMENT OF PHYSICS

JAMES REMUS WRIGHT, B. S., Ph. D., Associate Professor of Physics and Acting Chief of Department.

AIM OF INSTRUCTION

The instruction in physics is directed toward the following ends: (1) The training of teachers of physics for the secondary schools; (2) the training of preëngineering, premedical, pharmacy, and veterinary students for their later professional work; (3) the training of the general student in scientific methods of work and in the understanding of the place of physical science in the modern world. In all courses the laboratory and the problem methods of instruction are emphasized.

COURSES OF INSTRUCTION

Physics 1 and 2. Elementary Physics.—A first course in the elements of physics designed primarily for students who do not present entrance physics, or whose preparation in physics is found, after trial, to be deficient.

[7 hours throughout the year; entrance credit.

Physics 3. General Physics (prerequisite, Entrance Physics or Physics 1 and 2).—A course of lectures, demonstrations, and recitations covering the subjects of mechanics, molecular physics, and heat.

[3 hours, first semester; 3 units.

Physics 4. General Physics.—A continuation of Physics 3, covering the subjects of electricity, sound, and light, especial attention being given to recent discoveries and developments in physics.

[3 hours, second semester; 3 units.

Physics 3-E.—The same as Physics 3, but with additional work in the application of the fundamental principles and in the solution of problems. Intended primarily for preëngineering students and for students specializing in science. Prerequisite, Entrance Physics and Trigonometry.

[3 hours, first semester; 3 units.

Physics 4-E.—A continuation of 3-E, covering the subjects of electricity, sound, and light, especial attention being given to the applications of electricity to technical work.

[3 hours, second semester; 3 units.

Physics 3-M.—The same as Physics 3, but modified to suit the needs of the premedical student. Prerequisite, Entrance Physics or Physics 1 and 2.

[3 hours, first semester; 3 units.

Physics 4-M.—A continuation of 3-M, covering the subjects of electricity, sound, and light, especial attention being given to the applications of electricity to medical work.

[3 hours, second semester; 3 units.

Physics 3-P.—The same as Physics 3, but modified to suit the needs of the student of pharmacy. Prerequisite, Entrance Physics or Physics 1 and 2.

[3 hours, first semester; 3 units.

Physics 4-P.—A continuation of 3-P, covering the subjects of electricity, sound, and light, especial attention being given to spectroscopic analysis and use of the polariscope.

[3 hours, second semester; 3 units.

Physics 5 and 6. Electricity, Sound, and Light.—A laboratory course in electricity, sound, and light, supplemented by lectures and class room work. Prerequisite, Physics 3 and 4 and Trigonometry.

[6 hours throughout the year; 6 units. Associate Professor WRIGHT.

Mechanics 1 and 2. Analytic Mechanics.—A mathematical treatment of the fundamental principles of dynamics and statics, especial attention being given to the application of principles and to the solution of problems. Prerequisite, Physics 3-E and 4-E and Differential and Integral Calculus.

[3 hours throughout the year; 6 units. Associate Professor WRIGHT.

DEPARTMENT OF ZOOLOGY

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. D., Associate Professor of Zoology and Chief of Department.
RHEINART PARKER COWLES, B. A., Ph. D., Assistant Professor of Zoology.
LAWRENCE DILLER WHARTON, B. A., Instructor in Zoology.

Zoölogy 1 and 2. Comparative Zoölogy.—This course is designed to be introductory to medicine and veterinary science as well as to give a general introduction to zoölogy. A selection of important forms of Protozoa, Coelenterata, Platyhelminthes, Nemanthelminthes, Mollusca, and insecta will be made for laboratory study of invertebrate animals. A shark, lizard, bird, and mammal will be dissected as types of vertebrates.

Text-book: Parker and Haswell, Text-book of Zoölogy.

[9 hours throughout the year; 6 units.
Assistant Professor Cowles.
Mr. Wharton.

Zoölogy 3 and 4. General Biology (prerequisite, zoölogy 1 and 2). A course in which the nature and reactions of living substance and general biological laws and relations will be studied. Certain groups of animals will be studied in more detail, and with greater attention to the needs of the medical student than is possible in an elementary course. Particular attention will be paid to the biology of the Protozoa, and of the parasitic worms, to the venoms of snakes and other poisonous animals, and to general considerations of the cell. Further subjects considered will be the fundamental manifestations of life, reproduction, structural relationship, the effects of parasitism, regeneration, theories of heredity and evolution, the biology of infection and immunity. A number of lectures will be devoted to the history of the development of the biologic sciences.

The courses will consist of lectures, accompanied by illustrative laboratory work.

Text-book: Parker and Haswell, Text-book of Zoölogy; McFarland, Biology, General and Medical; Darwin, Origin of Species.

[9 hours throughout the year; 6 units.
Associate Professor Griffin.
Assistant Professor Cowles.
Mr. Wharton.

Zoölogy 5 and 6. Natural History of Philippine Animals.—A course in which a study of the animals of the Philippines will be made, with special regard to their distribution, relationships, and adaptations. Students will make observations and collections in the field. Laboratory work will be based on museum material as well as on the students' collections. The course will include numerous lectures.

[9 hours throughout the year; 6 units.

Zoölogy 8. Mammalian Anatomy and Physiology.—This course is designed more particularly for pharmacy students, but it will be found a useful course for many others, especially those who expect to teach.

It will consist of three recitations per week on anatomy and physiology, and three two-hour laboratory periods per week in the dissection of the cat.

Text-books: Reighard and Jennings, Anatomy of the Cat; Martin, Human Body.

[9 hours, second semester; 3 units.
Mr. WHARTON.

DEPARTMENT OF MATHEMATICS

WILLIAM JOSEPH COLBERT, B. A., Associate Professor of Mathematics and Acting Chief of Department.
THOMAS JOSEPH FREEMAN, B. A., Instructor in Mathematics.

Mathematics 1. Intermediate Algebraic Theory.—Involution and evolution; the binomial theorem for a positive integral exponent; inequalities; surds; theory of exponents; pure, imaginary, and complex numbers; quadratic equations; equations in the quadratic form; indeterminate linear equations; ratio and proportion; variation; progression; logarithms. Graphic methods are employed wherever applicable. The ability to demonstrate principles is an important requirement of this course. This course is intended for those who do not take courses 2 and 3.

Text-book: Wells, Advanced Course in Algebra.

[3 hours, either semester; 3 units.

Mathematics 2. Advanced Algebra.—A rapid review of involution and evolution; surds; theory of exponents and quadratic equations; inequalities; pure, imaginary, and complex numbers; indeterminate linear equations; ratio and proportion; variation; progressions; convergency and divergency of series; indeterminate coëfficients; the binomial theorem for any exponent; logarithms.

Text-book: Wells, Advanced Course in Algebra.

[3 hours, first semester; 3 units.

Mathematics 3. Advanced Algebra (prerequisite, Mathematics 2).—Compound interest and annuities; permutations and combinations; probability; continued fractions; summation of series; theory of numbers; determinants; theory of equations; solution of higher equations.

Text-book: Wells, Advanced Course in Algebra.

[3 hours, second semester; 3 units.

Mathematics 4. Plane Trigonometry.—The development of the general formulæ of plane trigonometry, with application to the solution of plane triangles and the measurement of heights and distances. Practice in computation with logarithmic tables.

Text-book: Wentworth, Plane Trigonometry.

[3 hours, either semester; 3 units.

Mathematics 5. Solid Geometry.—Supplementary studies in plane geometry and the fundamental propositions of solid and spherical geometry, with problems in demonstration and in the mensuration of surfaces and solids. The ability to apply geometry to practical problems is an important requirement in this course.

Text-book: Wentworth, Solid Geometry.

[3 hours, either semester; 3 units.

NOTE.—Mathematics 1 and 4 are required of all students in the first year of the Junior College. Mathematics 2, 3, and 5 are included in Mathematics 6 and 7. They are described separately in order that students may elect these parts of engineering mathematics independently of the remainder of the course. Separate classes will not be formed in Mathematics 2, 3, and 5, unless the number of those electing the courses necessitates their organization.

Mathematics 7 and 8. Engineering Mathematics.—First year: Engineering Mathematics is a continuous course in the mathematics preparatory for entrance to the College of Engineering, extending through the two years of the Preparatory Engineering Course. It consists of Algebra, Solid Geometry, Plane Trigonometry, Analytical Geometry, Differential and Integral Calculus. During the first year the class is expected to complete algebra, solid geometry, plane trigonometry, and part of analytical geometry.

Text-books: Wenthworth, Solid Geometry; Wenthworth, Plane and Spherical Trigonometry; Wells, Advanced Course in Algebra; Ashton, Analytical Geometry.

[10 hours throughout the year; 10 units.

Mathematics 9 and 10. Engineering Mathematics.—Second year: The continuation of courses 7 and 8.

Text-book: Snyder and Hutchinson, Calculus.

[10 hours throughout the year; 10 units.

Mathematics 12. Business Methods and Arithmetic.—A course in the arithmetic and business methods ordinarily used by commercial houses. Primarily for students of Pharmacy.

[3 hours, second semester; 3 units.

DEPARTMENT OF HISTORY

ALEXANDER EDWARD WROTTESLEY SALT, B. A., M. A., Instructor in History.
CHARLOTTE ELIZABETH NEALE, B. L., Instructor in History.

History 1 and 2. English Constitutional History.—An outline of political and constitutional history, as a framework for the closer study of the economic social development of the nation, through lectures and text-books, collateral readings, and reports.

Text-books: Taswell-Langmead, English Constitutional History; Adams and Stephens, Select Documents of English Constitutional History. Required of all students in the preparatory law course.

[3 hours throughout the year; 6 units. Mr. SALT.

History 3 and 4. Modern European History.—A study of European history from 1648 to the present time.

Text-books: Morse Stephens, Revolutionary Europe, Alison Phillips, Modern Europe.

[3 hours throughout the year; 6 units. Miss NEALE.

History 6. Constitutional History.—A study of the constitutional history of the United States through the colonial, revolutionary, and national periods.

Text-books: Channing, Guide to American History; Preston, Documents illustrative of American History.

[3 hours, second semester; 3 units. Mr. SALT.

History 7. Philippine History.—A general survey of the history of the Philippine Islands. There is no adequate text-book on Philippine History, but students will be required to do wide reading from such books as Blair and Robertson, the Philippine Islands 1493–1898, various works of religious writers, and Montero y Vidal, Historia de Filipinas. A reading knowledge of Spanish, while not required, will be of great advantage.

[3 hours, first semester; 3 units. Mr. SALT.

History 8. Oriental History.—A general survey of Asiatic countries; a study of the history, economic and social conditions, and foreign relations of Japan and China.

Text-books: Griffis, The Mikado's Empire; Boulger, History of China.

[3 hours, second semester; 3 units. Miss NEALE.

History 9 and 10. Historical Geography.—The relation of geography to History. A study of geography with reference to political boundaries.

Text-book: Freeman, Historical Geography of Europe.

[3 hours throughout the year; 6 units. Miss NEALE.

History 11 and 12. History and Theories of Government.

Text-books: Woodrow Wilson, The State; Dodd, Modern constitutions.

[3 hours throughout the year; 6 units. Mr. SALT.

History 13 and 14. History of Philosophy.—A study of the leading ancient and modern ethical and philosophical theories.

Text-books: Rogers, History of Philosophy; Sidgwick, History of Ethics.

[3 hours throughout the year; 6 units. Mr. SALT.

History 15 and 16 (satisfactory completion of Political Science 1, or its equivalent, will be prerequisite).—A course in American Government will be given in 1912–1913, if sufficient students register for the course.

Text-book: Bryce, American Commonwealth.

[3 hours throughout the year; 6 units. Mr. SALT.

Economics 1. Principles of Political Economy.—This course is designed to give students an elementary knowledge of modern economic theories and to aid them to study practical Philippine problems.

Text-book: Ely, Principles of Economics.

[3 hours, first semester; 3 units.

Sociology 1. Principles of Sociology.—The nature and scope of social science; the status of the population; the units of social organization; special social problems of city life; questions of the family; wealth and poverty; the temperance question; crime and punishment; social possibilities and achievements.

Text-book: Giddings, Principles of Sociology.

[3 hours, second semester; 3 units.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

TERMS AND HOURS

The requirements for the degree of Bachelor of Arts are residence for four semesters and, in addition to the prescribed amount of athletics, the completion of at least sixty-eight hours of work, under the rules governing the choice of studies.

In case a student has received surplus entrance credit (see p. 40), there will be deducted from the hours required for graduation the number of hours his surplus entrance credit may warrant, and the student will be considered to have been in residence for the period corresponding to the number of hours for which he is given credit on entrance.

A student admitted to the College of Liberal Arts from another college of the University of the Philippines or from any other institution of collegiate rank shall be regarded as having completed the number of terms and of hours to which his records entitle him. He will receive all the privileges of students who have completed the same number of terms and hours by residence in the college. In order, however, to obtain the degree of Bachelor of Arts he must have been in residence at least two semesters in the College of Liberal Arts, and in that college only.

Applications for admission to the College of Liberal Arts must satisfy the entrance requirements of the college, either by passing the university entrance examinations in the required subjects as explained on pages 31 to 38, or by presenting acceptable certificates in lieu of examination, as explained on pages 39 and 40.

The minimum of entrance requirements is 17 units of the entrance subjects enumerated on pages 39 and 40.

No student whose standard has been below grade 2 in any subject taken during the preceding term will be allowed to register for more than fifteen hours.

CHOICE OF STUDIES

1. Students registering in the College of Liberal Arts for the first time must hand in their study cards, with the list of courses for the semester, at the dean's office on or before the third day of instruction.
2. Two weeks before the end of the first semester students must hand in at the dean's office their study cards with the list of courses for the next semester.
3. Students may make changes in their list of courses only during the first ten days of instruction, and then only with the approval of their adviser and of the dean on payment of the fee required for reregistration (see p. 41).
4. After the first ten days of the semester no student shall have the right to withdraw from any course in which he is registered unless he shall previously obtain the authorization of the dean to withdraw.

Of the sixty-eight hours required for the degree of Bachelor of Arts all students are required to take the following:

	Units.
History	6
English	8
French or German	6
Science	6
Mathematics	6
Total	32
Athletics[1]	8

In addition, 24 units must be taken in a single group.

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[1] These units will not count toward graduation.

STUDENT ADVISERS

In the College of Liberal Arts each student is placed under the immediate charge of a member of the faculty, who acts as his adviser in matters pertaining to university work. The student must consult his adviser in choosing his studies, and the approval of the adviser must also be obtained before registration can be completed.

HOSPITAL FACILITIES AND MEDICAL ATTENDANCE

The Philippine General Hospital grounds adjoin the campus of the University. Students of the University may there receive emergency attendance free, and will be admitted for treatment in case of illness at the usual reasonable rates.

LIBRARIES

Through the courtesy of the librarian, the privileges of the library of the Military Information Bureau are extended to the faculty of the University of the Philippines. This library contains a good collection of books on military history, on colonization and colonial government, on current problems of the Orient, as well as all the essential secondary material for the study of Philippine history. It is located in Fort Santiago, Manila.

The privileges of the Circulating Library of Manila are also extended to students of the University free of the usual charge. The following regulations must be observed:

1. The student shall present a statement, signed by the dean of his college, to the effect that he is a regularly enrolled student of the University, and in good standing.
2. The student shall agree in writing to obey the regular rules and regulations of the library and to be personally responsible for any loss that the library may sustain through him.
3. The University of the Philippines will require its students to fulfill strictly all the rules and regulations of the library.
4. These privileges will be denied any student whenever any of the above rules and regulations are infringed.

The scientific division of the Philippines Library is in the building of the Bureau of Science. The books of this library may be used by students under special permission.

GRADUATION WITH HONORS

The degree of Bachelor of Arts "with highest honors" will be given to students obtaining first grade in all subjects of their course; the degree of Bachelor of Arts "with honors" will be given to all students obtaining first grade in at least 48 units and second grade in all other units.

COLLEGE FOLIO

The College Folio is the literary magazine published by the students of the College of Liberal Arts. The object of the paper, as stated in an editorial of the second number, is two-fold. It aims at forwarding among the members of the University the expression of their thoughts in literary form and in correct English, and at making a permanent record of past and present national traditions and customs. The editors and business managers of the Folio are elected by the members of the various classes, with the approval of the dean; and the students of the institution write all the articles and furnish all the money necessary for the support of the paper.

ATHLETICS

All students will be required to take systematic exercise provided they shall be certified as fit by the medical examiner. They shall choose at the beginning of each semester the branch of athletics in which they wish to participate.

MEDICAL EXAMINATION

All students of the college are required to undergo a medical examination at the beginning of each semester. This examination is a prerequisite to registration. No fee will be charged for the examination.

GENERAL DEPOSIT

Each student must deposit ₱10 with the registrar upon matriculation. This deposit is for the purpose of covering any losses of apparatus, supplies, or books, or any damages to University property which may properly become a charge against the student. If students take ordinary care of the materials issued to them, their deposits should be returned to them intact when they leave the University.

FEES

A laboratory fee of ₱5 per semester will be charged in those laboratory courses giving not more than three hours' credit; ₱10 will be charged for laboratory courses giving more than three hours' credit.

MICROSCOPES AND LABORATORY APPARATUS

The college is equipped with a sufficient supply of microscopes and other laboratory apparatus for the use of the students. All apparatus must be returned to the storerooms in good condition, or charges for replacement or repairs will be made. Students about to leave college should be careful to see that all books are returned to the various libraries and that all University property for which they are responsible is returned to the storerooms.

EXPENSES

The expenses connected with the college courses consist of the general deposit, laboratory fees, athletic fees, and the cost of text-books. The deposit and athletic fees are the same for all. The laboratory fees are not likely to exceed ₱20 per semester. The cost of books is variable, but every student should be prepared to spend from ₱60 to ₱100 a year for books. A student who is taking no laboratory courses may find that ₱80 a year will cover the expenses mentioned. One who is taking a considerable amount of laboratory work and whose books are more expensive may need ₱150.

Room and board in Manila costs from ₱15 to ₱50 per month.

THE PREPARATORY LAW COURSE

The establishment of a College of Law was decided upon by the Board of Regents on January 12, 1911. It was then determined that students desiring to enter the College of Law in 1912 must present an entrance requirement of one year of college work. In 1913 and thereafter the degree of Bachelor of Arts from the Junior college, or its equivalent, will be required. In accordance with this action of the Board of Regents the following preparatory law course has been adopted, with the approval of the Dean of the College of Law, which must be taken by all students desiring to study law.

FIRST YEAR

First semester.	Units.	Second semester.	Units.
English 1	3	English 2	3
Spanish 1 or Latin 1	3	Spanish 2 or Latin 2	3
History 1	3	History 2	3
History 11	3	History 12	3
Physics 1	5	Physics 2	5
Total	17	Total	17

SECOND YEAR

English 9	3	English 10	3
English 11	3	English 12	3
Spanish 3 or Latin 3	3	Spanish 4 or Latin 4	3
History 3	3	History 4	3
History 13	3	History 14	3
Economics 1	3	Sociology 1	3
Total	18	Total	18

THE PREPARATORY MEDICAL COURSE

The faculty of the College of Medicine and Surgery on July 12, 1910, adopted the course outlined below as an entrance requirement to be enforced in 1914 and thereafter. This course leads to the degree of Bachelor of Arts. Students who complete this course in 1913 will be admitted to the College of Medicine and Surgery without examination.

FIRST YEAR

First semester.	Units.	Second semester.	Units.
English 1	3	English 2	3
German 1	3	German 2	3
Zoölogy 1	3	Zoölogy 2	3
Physics 3-M	3	Physics 4-M	3
Chemistry 1	3	Chemistry 2	3
Mathematics 4	3	Mathematics 1	3
Total	18	Total	18

SECOND YEAR

English 3	1	English 4	1
German 3	3	German 4	3
Physics 5	3	Physics 6	3
Chemistry 3	3	Chemistry 4	3
History 3	3	History 4	3
History 13	3	History 14	3
Total	16	Total	16

THE PREPARATORY ENGINEERING COURSE

The preparatory engineering course is a two-year course given in the College of Liberal Arts, especially to prepare students for a professional course in engineering. This course or its equivalent will be required of all students desiring to enter the College of Engineering. The degree of Bachelor of Arts will be conferred upon the completion of the course.

Engineering mathematics is a continuous course consisting of algebra, solid geometry, plane trigonometry, analytical geometry, differential and integral calculus.

FIRST YEAR

First semester.	Units.	Second semester.	Units.
Engineering Mathematics	5	Engineering Mathematics	5
English 1	3	English 2	3
French 1 or German 1	3	French 2 or German 2	3
History 3	3	History 4	3
Drawing 1	3	Drawing 2	4
Total	17	Total	18

SECOND YEAR

Engineering Mathematics	5	Engineering Mathematics	5
English 3	1	English 4	1
French 3 or German 3	3	French 4 or German 4	3
Physics 3-E	3	Physics 4-E	3
Chemistry 1	3	Chemistry 2	3
Surveying 1	3	Surveying 2	3
Total	18	Total	18

THE SENIOR COLLEGE

Three years of work, leading to the degree of Master of Arts, will be offered in the upper division of the College of Liberal Arts, to be known as the Senior College.

Admission to the senior college is conditioned upon the completion of the junior college course of the College of Liberal Arts of the University of the Philippines, or of an equivalent amount of work elsewhere. The courses of the senior college will satisfy the demand for an extensive liberal education, *but their more important purpose at the present time is to prepare teachers for the secondary schools of the Philippine Islands.*

Students of the senior college will choose their courses subject to the coöperation and approval of their advisers.

Instruction in their senior college began with the opening of the college year 1911–1912. The courses as outlined are such as can be given inmediately; they will be added to as the body of teachers of the college grows, and as the needs of students are recognized.

DEGREE OF MASTER OF ARTS

The degree of Master of Arts will be conferred upon candidates who have completed satisfactorily a three-year course in the senior college. The university does not engage to grant this degree for three years' work, unless the candidate's work satisfies the faculty that he is worthy of receiving the degree at that time.

THESIS

Every student who is a candidate for the degree of Master of Arts, shall, in his last year of college work, arrange with the department in which he is taking his principal work to write a thesis, which must be a scholarly dissertation on some subject coming within the province of that department. If accepted, the thesis shall entitle him to not more than three hours of credit, at the discretion of the department. The subject must receive the written approval of the professor in charge of the study to which it relates, and a memorandum of such approval and of the title of the thesis must be filed with the dean. A bound copy of the thesis, typewritten on one side of paper 8 by 10½ inches in size, and double-spaced, must be deposited with the dean, for presentation to the faculty. The copy thus presented shall become the property of the university.

WORK IN OTHER COLLEGES

It will be advantageous for certain students of the senior college to take courses in the Colleges of Agriculture, Medicine, Law, and Veterinary Science; such courses will be counted toward the degree of Master of Arts.

DEPARTMENTS OF INSTRUCTION

DEPARTMENT OF BOTANY

ELMER DREW MERRILL, B. S., M. S., Associate Professor of Botany and Acting Chief of Department.
WALTER ROBERT SHAW, B. A., M. A., Ph. D., Assistant Professor of Botany.

Courses in botany will be offered to meet the needs of (*a*) students preparing to become teachers of biological sciences in the high schools of the Philippines; (*b*) students in pharmacy; (*c*) students desiring work in science without reference to special application in their chosen fields of labor.

For those intending to teach high-school botany two semesters of work will be given in the first year of the college course. This will be followed by twenty unit hours of botany courses to be taken during the third and fourth years of the college course, to include a thesis to be prepared in the final semester, and to lead to the degree of Master of Arts. Approved field work during a major portion of two vacations will be a requirement for this degree. The completion of a high-school course including a year of work in botany, is a prerequisite to admission to any of these courses as a candidate for the advanced degree.

Botany 13. Vegetable Histology.—A systematic study of the tissues of vascular plants. Methods of section-cutting and mounting, and the use of reagents and stains.

[First semester; 3 units. Assistant Professor SHAW.

Botany 15 and 16. Vegetable Physiology.—Lectures and laboratory work on the physiology of the vascular plants.

[First semester, 2 hours; second semester, 5 hours; 7 units. Assistant Professor SHAW.

Botany 17. Economic Botany.—A study of the classification and ecology of some of the more important cultivated plants.

Botany 18. Plant Diseases.—The fungus and bacterial diseases of cultivated plants and the means of preventing or checking them.

Botany 19. Botanical Methods.—Practice in growing algae, fungi, and ferns for use in the class room. The collection and preservation of material for use in high-school laboratory courses.

Botany 20. Ecology.—(1) The collection and classification of seed plants, to furnish a basis for the study of the ecology of a limited area, including a wide range of plant formations. (2) A study of ecological factors in plant distribution. These are vacation courses to be given at some base from which a series of diverse plant formations may be reached.

[Vacation. Assistant Professor SHAW.

DEPARTMENT OF ENGLISH

DEAN SPRUILL FANSLER, B. A., M. A., Assistant Professor of English.
HARRIOTT ELY FANSLER, B. A., M. A., Assistant Professor of English.

English 13. Editorial Writing.—Daily themes on subjects of present interest. Open only to those students who have completed English 1 and 2.

[3 hours, second semester; 3 units. Assistant Professor H. E. FANSLER.

English 11 and 12. Forensic Logic and Argumentation.—First semester: A historical study of the forum and its masters, of schools of logic, and of the technique of proof.

Second semester: Analysis of great pieces of argumentation; practice in writing briefs; the delivery of at least two original speeches by each member of the class. Lectures, conferences, arrangement of debates.

[3 hours throughout the year; 6 units. Assistant Professor H. E. FANSLER.

English 15. Speeches for Special Occasions.—The writing and oral delivery of toasts, nomination, presentation, and acceptance speeches; simple talks on popular and scientific subjects, political stump speeches, and pleas. Lectures on the style and methods of successful public speakers.

[3 hours, first semester; 3 units. Assistant Professor H. E. FANSLER.

English 14. English Grammar.—A scientific historical study of English phonology, accidence, and syntax. No previous knowledge of Anglo-Saxon is requisite, though students selecting this course must have a general acquaintance with at least two languages other than modern English.

[3 hours, second semester; 3 units. Assistant Professor D. S. FANSLER.

English 16. The English Novel.—The development of prose fiction from Lyly to Meredith; a comparative study of English, Spanish, and Filipino ideals in romantic and realistic fiction. The influence of Spanish literature on English is emphasized. Each student is required to read a number of selected novels and to write reports thereon.

[3 hours, second semester; 3 units. Assistant Professor D. S. FANSLER.

English 17. Nineteenth Century English Prose.—An introductory course to the essayists and philosophers from Coleridge to Matthew Arnold. In 1910 most of the time was devoted to a study of Carlyle, Ruskin, Arnold, and the rise of periodical literature. The students are required to keep notebooks which are submitted for examination at the end of the semester. Lectures, recitations, and a considerable amount of outside reading and writing.

[3 hours, first semester; 3 units. Assistant Professor D. S. FANSLER.

English 19 and 20. Filipino Folklore; a course in Translation.—A comparative study of the beliefs and customs reflected in the traditional literatures of the various dialect groups of the Islands. This course is given in English and includes much practice for the student in putting his native speech into idiomatic English equivalent.

[3 hours throughout the year; 6 units. Assistant Professor D. S. FANSLER.

DEPARTMENT OF HISTORY

ALEXANDER EDWARD WROTTESLEY SALT, B. A., M. A., Instructor in History and Economics.

History 1 and 2 (English Constitutional History), 3 and 4 (Modern Europe), and 6 (American Constitutional History) may be taken in the senior college by permission of the student's adviser.

Courses belonging mainly to the senior college are the following:

History 11 and 12. Comparative Federal Institutions.—Federal institutions in Greece, Italy, and western Europe; origin and character of the Federal Constitution of the United States; origin and character of the federal constitution of Switzerland; origin and character of the federal constitutions of the Dominion of Canada and of the Commonwealths of Australia and South Africa.

Text-book: Woodron Wilson, The State; Dodd, Modern Constitutions, may also be used with advantage.

[3 hours throughout the year; 6 units. Mr. SALT.

Sociology 1. Principles of Sociology.—The nature and scope of social science; the status of the population; the units of social organization; special social problems of city life; questions of the family; wealth and poverty; the temperance question; crime and punishment; social possibilities and achievements.

Text-book: Giddings, Principles of Sociology; Cooley, Human Nature and the Social Order, may be carefully studied with advantage; Spencer, Principles of Sociology, and Ward, Dynamic Sociology, are also valuable for subsidiary reference.

[3 hours, first semester; 3 units. Mr. SALT.

History 17. History of Colonization and Colonial Administration.—A study of the acquisition of colonial dominion; the operations of the great trading companies; the rivalry of the European States in America and Asia; the Spanish colonial system in America and the Philippines; the colonization and partition of Africa.

Text-book: Snow, Government of Dependencies, with Morris, History of Colonization (2 vols.), as a subsidiary reference.

History 18. Mediæval History.—The history of Europe from 395 to 1300; the disintegration of the Roman Empire; the German tribes and their settlement in the empire; Charlemagne; feudal institutions; the crusades.

History 19. Rise of the British Empire.—England and the growth of the colonies from the sixteenth to the nineteenth centuries. Explorations during the period of empire; growth of commercial companies; colonial settlements; wars with Holland, France, Spain; the Empire of India; the attainment of self-government by the colonies; changes in England related to external development.

Economics 2. History of Industrial Development in England.—Social progress of England during the last three centuries. The course will be conducted through (*a*) lectures; (*b*) supplementary reading of books; (*c*) maps and diagrams; (*d*) essays.

Facts in regard to each great industrial epoch will be presented, and the influence of these on the national life, thought and activity will be considered.

Economics 3. Economic History of the United States.—The United States in the economic history of the world; colonial economy; English colonial policy; the economic aspects of the Revolution; the economic situation after the Revolution; influence of foreign nations; rise of internal commerce and manufactures; the methods and means of transportation; the protective tariff; the currency; the western movement and the land question; organized labor and capital; the economics of slavery; the economic development of the South after the Civil War.

The following courses will be offered especially for those who purpose to teach history in secondary schools.

History 8. Teachers' Course in History.—The educational value of history; the use of sources and the organization of facts; methods and means of presentation; the qualifications of the teacher.

Text-book: Hinsdale, How to Study and Teach History.

History 9. Teachers' Course in American History.—Practical preparation for the teaching of American history; content of

American history in the high-school course; necessary and probable equipment; preparation and qualifications of the teacher; methods of teaching in use in the Philippines; use of texts, sources, aids; legitimate aims and ambitions of a teacher of American history.

Text-book: Channing and Hart, Guide to the Study of American History.

DEPARTMENT OF MATHEMATICS

WILLIAM JOSEPH COLBERT, B. A., Associate Professor of Mathematics, Acting Chief of Department.

Mathematics 13. Algebra.—A careful review of the basic principles of mechanical operations; the solution of difficult problems selected from a number of texts; discussions of the different methods of presenting the various topics; written papers pointing out the merits and demerits of the best texts, always with Philippine educational problems in mind; practice in teaching.

Mathematics 14. Geometry.—A careful review of the subject-matter of plane and solid geometry, emphasis being placed on original demonstrations and the solution of problems relating to the surfaces and volumes treated; discussions of methods and text-books; practice teaching.

Mathematics 15. Arithmetic.—Discussions of texts, further methods of presenting topics; arithmetic simplified by algebra and geometry; practice teaching.

NOTE.—Courses 13, 14, and 15 are intended solely for those who intend to take up the teaching of mathematics.

DEPARTMENT OF PHYSICS

JAMES REMUS WRIGHT, B. S., Ph. D., Associate Professor of Physics, Acting Chief of Department.

Physics 20. Heat and Molecular Physics.—A lecture course covering the kinetic theory, capillarity, elementary thermodynamics, solution, and electrolysis. Prerequisite: Physics 5 and 6 and Calculus.

[First semester, 3 hours; 3 units.

Physics 21. Experimental Physics: Molecular Physics and Heat.—A course of advanced laboratory work involving the determination of vapor pressure and densities, coefficient of friction of gases and liquids, molecular electrical conductivities, freezing and boiling points, latent and specific heats, high and low temperatures, radio-active constants, etc. Prerequisite: Physics 20.

[Second semester, 9 hours; 3 units.

Physics 22. Electricity and Magnetism.—A lecture course in theoretical electricity and magnetism, intended to supplement the work in Physics 6, and to prepare the student for advanced work in electricity. Prerequisite: Physics 6 and Calculus.

[First semester, 3 hours; 3 units.

Physics 23. Experimental Physics: Electricity and Magnetism.—A course of advanced laboratory work consisting of measurements in electricity and Magnetism. Prerequisite, Physics 22.

[Second semester, 9 hours; 3 units.

DEPARTMENT OF ZOOLOGY

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. D., Associate Professor of Zoology and Chief of Department.
RHEINART PARKER COWLES, B. A., M. A., Ph. D., Assistant Professor of Zoology.
LAWRENCE DILLER WHARTON, B. A., Instructor in Zoology.

Zoölogy 1 and 2, 3 and 4, 5 and 6, 8 (see p. 62).—These courses may be taken in the senior college by those students who have not been able to take them before graduation from the junior college.

Zoölogy 9 and 10. Comparative Anatomy and Embryology of Invertebrates.—A course designed for those who are preparing to teach zoölogy. Prerequisite, Animal Biology 1 and 2.

Zoölogy 11 and 12. Comparative Anatomy of Vertebrates.—An advanced course for those preparing to teach zoölogy. Prerequisites: Animal Biology 1, 2, and 5.

Zoölogy 14. Field Work.—Students who are preparing to teach zoölogy will be given the opportunity of accompanying expeditions during the vacations in order to obtain a practical knowledge of collecting and preserving specimens under field conditions, as well as to make studies and collections of their own. A considerable amount of field work will be required of all those expecting to teach zoölogy.

Zoölogy 16. The Teaching of Zoölogy.—Students preparing to teach will be given practical lectures and exercises in the teaching of elementary zoölogy; the types to be used in secondary school work, and the method of studying them will be especially considered. The students in this course will be assigned practical work in connection with other courses of the department.

Instruments, books, models, catalogues, etc., will be considered from the standpoint of the teacher.

THE COURSE IN PHARMACY

The course in pharmacy was begun June 5, 1911, with an enrollment of 30 students. Only the work of the first year was given, no students being admitted to the course with advanced standing.

The course in pharmacy will require three full years of study, and will lead to the degree of Graduate in Pharmacy. A fourth year will be offered leading to the degree of Pharmaceutical Chemist.

The entrance requirements for the course in pharmacy are those for entrance to the College of Liberal Arts (see p. 31).

The first and second year's work will be given during 1912–1913. No students from other schools will be admitted to advanced standing except upon examination. No work of the third year of the course will be given until the school year 1913–1914.

OUTLINE OF THE COURSE IN PHARMACY

FIRST YEAR

First semester.	Units.	Second semester.	Units.
English 1	3	Chemistry 2	3
Chemistry 1	3	Physics 4-P	3
Physics 3-P	3	Botany 4	3
Botany 3	3	Zoölogy 6	3
Total	12	Mathematics 12	3
		Total	15

SECOND YEAR

Botany 9	3	Botany 10	3
Pharmacology 2	3	Pharmacology 3	3
Chemistry 3	3	Chemistry 4	3
Bacteriology 7	2	Hygiene and Sanitation	3
Drug-store experience.		Drug-store experience.	
German (elective).		German (elective).	

THIRD YEAR

Botany 11	3	Botany 12	3
Pharmacology 4	3	Pharmacology 5	3
Pharmacology 14	2	Pharmacology 6	2
Chemistry 5	3	Pharmacology 8	3
Chemistry 9	2	Chemistry 6	3
Drug-store experience.		Drug-store experience.	
German (elective).		German (elective).	

FOURTH YEAR

Leading to the degree of Pharmaceutical Chemist. Prerequisite, the successful completion of the preceding three years, including two years of German.

Advanced Analytical Chemistry.
Food Analysis.
Water and Gas Analysis.
Physiological Chemistry.
Drug Synthesis.

DEPARTMENT OF BOTANY

ELMER DREW MERRILL, B. S., M .S., Associate Professor of Botany, Acting Chief of Department.

WALTER ROBERT SHAW, B. A., M. A., Ph. D., Assistant Professor of Botany.

Botany 3 and 4. Morphology and Classification of the Vascular Plants.—A course designed primarily for students of pharmacy. Special attention will be given to the study and classification of the local flora, the lectures and laboratory work to be supplemented by studies in the field and in the herbarium, including the preparation of a small herbarium by each student. Selected types of plants of economic importance as the source of drugs, etc., will be studied intensively. One object of the course is to give students of pharmacy a broad conception of the principles of taxonomy, and the relationships of various groups of plants, as a basis for future work in botany and pharmacognosy.

Text-book: Kraemer, Botany and Pharmacognosy.

[9 hours throughout the year; 6 units. Associate Professor MERRILL.

Botany 9 and 10. Vegetable Histology and Pharmacognosy.—About one-third of the first semester will be occupied with general histology of the vegetative structures of seedplants. The remainder of the year will be devoted to a study of crude vegetable drugs of the United States Pharmacopœa. The roots, rhizomes, tubers, and bulbs will be taken up in the first semester; and in the second semester the woods, barks, leaves and leaflets, and herbs and flowers. Each student will be provided with a compound microscope for use in the laboratory. Identification will receive carefull attention, and there will be frequent tests of ability to determine drugs. Lectures will give the main facts of the pharmacography of each drug.

Text-book: Kraemer, Botany and Pharmacognosy.

[9 hours throughout the year; 6 units. Assistant Professor SHAW.

Botany 11. Pharmacognosy.—A study of the fruits, seeds, and miscellaneous crude-vegetable and animal drugs of the United States Pharmacopœa. [Not given until 1913.]

[9 hours, first semester; 3 units.

Botany 12. Pharmacognosy: Powdered Drugs and Foods.—Microscopical examination of the more important powdered drugs and foods. Practise in the determination of unknown powders and the recognition of adulterants. [Not given until 1913.]

[9 hours, second semester; 3 units.

DEPARTMENT OF CHEMISTRY

PAUL CASPAR FREER, M. D., Ph. D., Professor of Chemistry and Chief of Department.
HARRY DRAKE GIBBS, B. S., Associate Professor of Chemistry.
MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S., Assistant Professor of Chemistry.
JOSE IGNACIO DEL ROSARIO, B. A., M. S., Instructor in Chemistry.

For the present the chemical work of the University is carried on in the new chemical laboratories of the College of Medicine and Surgery. The desks, apparatus, and equipment are of the most modern type and the facilities for work are excellent.

Chemistry 1 and 2. General Inorganic Chemistry.—Lectures, recitations, and laboratory work.

[9 hours throughout the year; 6 units. Associate Professor GIBBS.
Assistant Professor DEL ROSARIO.
Mr. JOSÉ I. DEL ROSARIO.

Chemistry 3 and 4. General Organic Chemistry.—Lectures, recitations, and laboratory work.

[9 hours throughout the year; 6 units. Associate Professor GIBBS.
Assistant Professor DEL ROSARIO.

The four courses described above are prerequisite to all the following courses.

Chemistry 5. Qualitative Analysis, Inorganic.—Lectures, recitations, and laboratory work.

[7 hours, first semester; 3 units. Assistant Professor DEL ROSARIO.

Chemistry 6. Quantitative Analysis, Inorganic.—Lectures, recitations, and laboratory work, including the principles of gravimetric and volumetric analysis.

[7 hours, second semester; 3 units. Assistant Professor DEL ROSARIO.

DEPARTMENT OF ENGLISH

DEAN SPRUILL FANSLER, B. A., M. A., Assistant Professor of English.
HARRIOTT ELY FANSLER, B. A., M. A., Assistant Professor of English.

English 1. Composition.—A practical course in writing and speaking English. One day a week is devoted to the study of idiom and to the correction of typical errors in English; and one day to oral expositions of assigned topics, accompanied by written themes, which are carefully criticised for form, diction, and content; and, having been corrected by the students, are subsequently returned to the instructor. In addition to the weekly themes at least six long compositions will be required of each member of the class during the year.

This course is prescribed *for all first-year students in the College of Liberal Arts.*

[3 hours throughout the year; 6 units.

DEPARTMENT OF HYGIENE

VICTOR GEORGE HEISER, B. A., M. D., Professor of Hygiene, Chief of Department.
CARROLL FOX, M. D., Associate Professor of Hygiene.
SALVADOR VIVENCIO DEL ROSARIO, B. A., M. D., Instructor in Hygiene.

Hygiene 1. Lectures in Hygiene and Sanitation.—Three hours per week, extending though the second semester of the second year. This course comprises all of the subjects usually studied, especial attention being paid to the causes, methods of transmission and methods of combating the communicable diseases, especially cholera and other water-borne diseases; the disposal of sewage and refuse, the control of a city's water and milk supply, infant mortality, adulteration of foods and other subjects relative to the duties of health officers.

Text-book: Harrington, Practical Hygiene.

[3 hours, second semester; 3 units.
Professor HEISER.
Associate Professor FOX.
Mr. DEL ROSARIO.

DEPARTMENT OF MATHEMATICS

WILLIAM JOSEPH COLBERT, B. A., Associate Professor of Mathematics.
THOMAS JOSEPH FREEMAN, B. A., Instructor in Mathematics.

Mathematics 12. Business Methods and Arithmetic.—A course in the arithmetic and business methods ordinarily used by commercial houses. Primarily for students of pharmacy.

[3 hours, second semester; 3 units. Mr. FREEMAN.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY

VERNON LEE ANDREWS, M. D., Associate Professor of Pathology and Bacteriology, Chief of Department.
ROY HAMMACK, M. D., Instructor in Pathology and Bacteriology.
JOSE HILARIO, M. D., Demonstrator.

Bacteriology 7.—In the Philippines the pharmacist of the provinces in many places undoubtedly will be called upon, in emergencies, to assist the doctor in sanitary work or occasionally to act on his own initiative. For this reason it has been deemed advisable to include in his training sufficient bacteriology to prepare him for this work. The work will not be as extensive or complete as that given in the regular course for medical students, but will offer, to those taking it, a fair knowledge of the principles of sterilization and disinfection, of making media and of studying bacteria. A few nonpathogenic organisms and the more common pathogenic ones will be studied. The methods of dissemination of disease germs and their entrance into the human body will be considered. More emphasis will be laid upon the hygienic than upon the pathological relations of the microörganisms. The theories of vaccines, serums, and antitoxins and methods of preserving them will be considered.

[6 hours, first semester; 2 units.
Dr. HAMMOCK.
Dr. HILARIO.

DEPARTMENT OF PHARMACOLOGY, TOXICOLOGY, AND MATERIA MEDICA

ALFRED OGLE SHAKLEE, B. S., M. D., Associate Professor of Pharmacology, Chief of Department.
——— ———, Assistant Professor of Pharmacology.
——— ———, Instructor in Pharmacology.
DANIEL DE LA PAZ, M. D., Assistant in Pharmacology.

The aim of the Department of Pharmacology in its relation to the course in pharmacy is first to guide the student in his application of the laws and facts of the fundamental sciences to the study of drugs, their physical and chemical properties, their sources, methods of collection, preparation, and preservation; to the detection of impurities and adulterations; to the detection of drugs and poisons in unknown mixtures; to the compounding of prescriptions and the dispensing of drugs. A second aim is to afford the student sufficient practice in the various methods and operations involved in the applications of science above mentioned to enable him to enter upon the practice of pharmacy with confidence in himself and with safety to the public. A third aim is to fit the student for original investigation along the lines above mentioned and to foster and to conduct research in all pharmacological fields. It is also aimed to present to the student important features in the history and development of pharmacy and in the legal status of the profession in this and other countries; as well as to present a discussion of the relations and interdependence, mutual duties, and obligations existing between the profession of pharmacy on the one hand and the profession of medicine and the people on the other. In all instruction given the department seeks to so apportion and relate the laboratory, lecture, and other work so as to obtain the maximum of efficiency.

Equipment.—The pharmacy courses proper are given this year for the first time. As this catalogue goes to press not all the apparatus and supplies necessary have been installed, but a large order will have been filled from abroad for both supplies and apparatus by the time the courses open, and it is expected that provision will have been made for good work from the beginning. The University is prepared to offer at the present time facilities that are creditable in these branches, and ample provision will soon be made for most satisfactory progress in all phases of the work. The laboratory is well lighted and is supplied with individual work desks for students with running water, gas, and electricity.

The library facilities are already good, as the scientific division of the Philippine Library, which is situated in the Bureau of Science buildings, is near at hand. This large and valuable collection of scientific periodicals is being continually increased as rapidly as funds are available. A working library will be at hand in the laboratory for ready reference.

Books.—Books recommended for the students' use in connection with the various courses are: Remington's Practice of Pharmacy, or Caspari's Treatise on Pharmacy, a copy of the U. S. Pharmacopeia VIII, and of the National Formulary for the courses in pharmacy; Detection of Poisons by Autenrieth & Warren, and Holland's Medical Chemistry and Toxicology for the course in Toxicology; The Chemistry of Synthetic Drugs by May or Fraenkel's Arzneimittel-Synthese for the course in Synthetic Drugs; Sollmann's Pharmacology for the course in Pharmacodynamics.

Pharmacology 2. Inorganic Pharmaceutical Preparations.—Three hours lectures and six hours laboratory.

In the lectures and recitations, the processes and principles of preparation and the properties, incompatibilities, and preservation of the inorganic substances used in medicine will be discussed. The advantages and disadvantages of pharmacopical methods will be considered; and also, where advisable, alternative preparations will be discussed. Among the preparations studied will be the preparations of inorganic acids, bases, salts, and oxides; of halogens, metals, minerals, etc.

The laboratory work will consist in the making of the preparations and the study of their properties by means of appropriate tests.

[9 hours, first semester; 3 units. Assistant Professor —— and Mr. ——.

Pharmacology 3. Galenical Preparations.—Three hours lectures and six hours laboratory.

In this course various galenicals will be prepared and studied in the laboratory, and discussed in the lectures. The course will include the preparation and study of waters, spirits, sirups, elixirs, glycerites, oleates, liniments, infusions, decoctions, tinctures, fluid extracts, extracts, etc.

[9 hours, first semester; 3 units. Assistant Professor ——.

Pharmacology 4. Plant Principles.—Three hours lecture and six hours laboratory.

The sources, processes of isolation, properties, and preservation of the various plant principles used in medicine will be considered in this course. The principles will be studied in the laboratory, and representative substances will be isolated from the raw material by the student. The lectures will be closely correlated with the laboratory work. The work will include a study of alcohols, aldeydes, ketones, organic acids, esters etc.; phenols, terpanes, ammonia derivatives, cyclic bases, alkaloids, glucosides, saponins, volatile and fixed oils, fats, gum, resins, etc.

[9 hours, second semester; 3 units. Assistant Professor ——.

Pharmacology 5. Drug Assay.—Three hours lectures and six hours laboratory.

This course is devoted to a practical study of the chemical assay of official drugs.

[9 hours, second semester; 3 units. Assistant Professor ——.

Pharmacology 6. Chemical Toxicology.—Two hours lectures and four hours laboratory.

In the laboratory the student will study the reactions of the poisons, and the processes of detection in the presence of other substances, including stomach contents, tissues, etc.; and also, where practical, quantitative estimations will be made.

The substances studied will be taken up systematically and the lectures and laboratory work will supplement each other.

[6 hours, second semester; 2 units. Associate Professor SHAKLEE.

Pharmacology 8. Prescription Reading, Compounding, and Dispensing.—Three hours lectures and six hours laboratory.

This course is devoted to a study of prescription latin, prescription forms and abbreviations, the compounding of prescriptions, and the dispensing of medicines. It includes a systematic study of incompatibilities and a review of posalogy as it concerns the pharmacist.

[9 hours, second semester; 3 units. Assistant Professor ——.

Pharmacology 13. Toxocological Pharmacodynamics.—Two hours lectures and six hours laboratory.

This is a lecture and laboratory course designed for students of pharmacy. Its object is to furnish the student with some accurate ideas of the physiological action of poisons, and also to acquaint him with methods of biological assay of drugs.

[8 hours, first semester; 3 units.
Associate Professor SHAKLEE.
Dr. DE LA PAZ.

Pharmacology 14. Pharmaceutical History, Jurisprudence, and Ethics.—Two hours lectures.

This course of lectures discusses the origin and development of the pharmaceutical profession; the legal status of the profession; its relations with the profession of medicine, and with the people; its relations to the nostrum evil, to drug habituation, etc.

[2 hours, first semester; 2 units.

Pharmacology 15. Pharmacological Seminar.—Conferences; third year.

A conference course in the study of the most important original papers on pharmacological subjects. Each student will be expected to follow and to report on a limited number of current journals, and to report to the class at stated intervals reviews of assigned articles for class discussion.

[7.30 to 9.30 a. m., Saturdays, first semester. Associate Professor SHAKLEE.

Pharmacology 16. Pharmacological Research.—A course in pharmaceutical research is open to those fitted to undertake the work, and who have sufficient time to devote to make the work worth while. Research may be pursued in any pharmacological line, including the isolation or plant principles, physiological action of drugs, experimental therapeutics, toxicology, etc.

[The hours will be arranged with the instructor.

DEPARTMENT OF PHYSICS

JAMES REMUS WRIGHT, B. S., Ph. D., Associate Professor of Physics and Acting Chief of Department.

Physics. 3–P.—The same as Physics 3, but modified to suit the needs of the student of pharmacy. Prerequisite: Entrance Physics or Physics 1 and 2.

[3 hours, first semester; 3 units.

Physics 4–P.—A continuation of 3–P, covering the subjects of electricity, sound and light, especial attention being given to spectroscopic analysis and use of the polariscope.

[3 hours, second semester; 3 units.

DEPARTMENT OF ZOOLOGY

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. D., Associate Professor of Zoology, Chief of Department.

RHEINART PARKER COWLES, B. A., Ph. D., Assistant Professor of Zoology.

LAWRENCE DILLER WHARTON, B. A., Instructor in Zoology.

Zoölogy 6. Mammalian Anatomy and Physiology.—This course is designed more particularly for pharmacy students, but it will be found a useful course for many other students, especially those who expect to teach.

It will consist of three recitations per week on anatomy and physiology, and two three-hour laboratory periods per week in the dissection of the cat.

Text-books: Reighard and Jennings, Anatomy of the Cat; Martin, Human Body.

[9 hours, second semester; 3 units. Mr. WHARTON.

LIST OF STUDENTS

[P., Pharmacy; P. M., Preparatory Medical Course; P. E., Preparatory Engineering Course; P. L., Preparatory Law Course; L., Student of College of Law; M., Student of College of Medicine and Surgery; V., Student of College of Veterinary Science; E., Student of College of Engineering; Sp., Special Student; P. Agr., Preparatory Agriculture.]

Graduate students

Clinton, Guy, Chemistry.
Light, S. F., Zoölogy.
Wharton, Lawrence D., Zoölogy.

Senior College

Yamzon, Victoriano.

Students in the Junior College, College of Liberal Arts

SECOND YEAR (16)

Borromeo, Canuto (E.).
Claudio, Eduardo.
Aurelio, Corcuera (E).
Cosca, Severo (P. M.).
Dacanay, José Q. (P. M.).
Desiderio, Josefa.
Fabella, Vicente (E.).
Garćia, Gonzalo (E.).
Guanio, Domingo (E.).
Gullas, Paulino (E.).
León, Walfrido de (P. M.).
Marquez, Paz.
Montemayor, Marceliano (E.).
Nostratis, Ricardo (E.).
Rañola, Andres.
Reyes, Teofilo (E.).

FIRST YEAR (127)

Abaya, Luis (P. L.).
Abuyen, Esperidion (P. M.).
Agana, Marcelo S. (P. M.).
Aglipay, Emilio (P. M.).
Alcantara, Gregorio (P. M.).
Alvarado, Eduardo R. (P. M.).
Angeles, Jesus P. (P. E.).
Arnaldo, Crispulo (P. M.).
Avila, Justo (P. M.).
Badilla, Paulo (P. E.).
Baja, Emanuel.
Bautista, Pantaleon (L.).
Bautista, Ricardo (P. M.).
Belmonte, Gabriel (P. L.).
Borloñgan, Mateo (L.).
Borromeo, José R. (V.).
Bunuan, Vicente G. (P. M.).
Campo, Lorenzo (P. L.).
Campomanes, Arsenio (P. E.).
Clemente, Amando (P. E.).
Clemente, Hilario (P. E.).
Concepcion, Alfonso C. (P. M.).
Concepcion, Daniel (P. E.).
Concepcion, Felix (L.).
Corpus, Teofilo P. (P. M.).
Cortes, Augusto J. D. (P. M.).
Cortes, Pedro J. (P. E.).
Crisostomo, José T. (P. L.).
Crisostomo, Mariano (P. L.).
Cruz, Mamerto S. (P. E.).
Damian, Luis (P. M.).
Dayao, Amado (P. L.).
Deles, Cresenciano H. (P. M.).
Dumlao, Alejandro (V.).

FIRST YEAR (127)—continued

Edralin, Aciscio (P. E.).
Enriquez, Celso A. (P. M.).
Esquivel, Facundo (P. M.).
Esteban, Baldomera (P. M.).
Fajardo, Rodolfo A. (P. M.).
Faustino, Leopoldo A. (P. E.).
Feril, Constancio (P. L.).
Fernandez, Vicente (P. E.).
Francisco, Antonia (P. M.).
Gabiola, Ramon (P. E.).
Galang, José (V.).
Gamboa, Luis (P. M.).
Garcia, Felix M. (Sp.).
Garcia, Macaria (P. M.).
Garcia, Paciano T. (P. M.).
Garcia, Simon L. (P. E.).
Gloria, José P. (P. L.).
Gullas, Vicente (L.).
Gustilo, Jesus J. (P. M.).
Hidalgo, Pilar.
Hidalgo, Ursula.
Hilario, Procopio (P. L.).
Kalaw, Maximo (L.).
Ladao, Juan M. (P. L.).
Lava, Vicente G. (P. E.).
Ledesma, Daniel (P. E.).
Leiva, Lamberto (P. M.).
Leon, Felix Fernandez de (P. M.).
Leoncio, Arsenio (Sp.).
Lopez, Luciano (P. M.).
Lozano, Manuel (E.).
Lualhati, Genaro (P. M.).
Lualhati, Guillermo (P. L.).
Magcauas, Paz (M.).
Malabanan, Tarcila.
Mamawal, Vitaliano F. (P. L.).
Mandanas, Aniceto Y. (P. M.).
Mañalac, Anatalio (L.).
Mañalac, Gabriel (V.).
Marella, Mariano (P. M.).
Marfori, Felix (L.).
Marquez, Hilario (P. M.).
Marquez, Socorro.
Memije, Frank X. (P. E.).
Mendiola, Ramon (P. E.).
Montellano, Ysidoro (V.).
Montenegro, Roman (P. M.).
Navarro, Maximina.
Nepomuceno, Perfecto (P. M.).
Ochoa, Santiago (M.).
Olympia, Manuel (V.).
Pamatmat, Sebastian (P. L.).
Panganiban, Crisanto (V.).
Panis, Emiliano (M.).
Panlilio, Josefa (P. M.).
Patino, Platon (P. E.).
Perez, José.
Perito, Antonio (P. E.).
Philbrook, J. W. (M.).
Rama, Manuel J. de la (P. E.).
Rodriguez, Pedro (P. M.).
Sales, Matias N. (M.).
Salinas, Jesus.
Salvosa, Luis (P. E.).
San Agustin, Gregorio (V.).
Sanson, Emilio (V.).
Santiago, Cristobal (P. M.).
Santiago, Daniel (L.).
Santiago, Felicisimo (P. L.).
Santos, Adriano (P. M.).
Santos, Pedro (P. M.).
Santos, Salvador A. (P. M.).
Sebastian, Proceso E. (L.).
Suanico, Manuel (P. M.).
Tabora, Manuel (P. L.).
Tan, Bienvenido A. (L.).
Tan, Vidal A. (P. E.).
Tan Chanco, Sylvestre (P. E.).
Tin, Ty Kong (P. M.).
Tirona, Joaquina E. (M.).
Torralba, Fermin S. (P. L.).
Tupas, Alberto (P. M.).
Uichanco, Leopoldo (P. Agr.).
Valdez, Ulpiano (P. L.).
Viado, José M. (P. E.).
Villamiel, Pedro D. (P. M.).
Villanueva, Candelaria (M.).
Villanueva, Dionisio (P. E.).
Villegas, Anastacia.
Villegas, Arsenio (E.).
Ycasiano, Abelardo (P. E.).
Ysmael, Felipe (P. L.).
Yulo, Felix S. (P. M.).
Zarco, Pablo V. (M.).

Students of pharmacy

FIRST YEAR (32)

Abadilla, Honorio.
Ancajas, Angel B.
Asuncion, Dolores.
Bautista, Modesto.
Cabezas, Carmen A.
Carriedo, Natalio.
Chiong, Rosa.
Eleazar, Gregorio.
Eleazar, Juan V.
Francisco, Agapita.
Francisco, Modesta.
Herras, Calixto Y.
José, Lino.
Jugo, Filomena.
Llamas, Dionisio R.
Locsin, Magdalena.
Locsin, Marinela, A.
Malvar, Aurelia.
Marañon, Joaquin.
Maseras, Miguel A.
Mendoza, Remedios.
Mercado, Soledad.
Paulilio, Anatolia.
Quesado, Eugenio C.
Ramos, Crescenciana.
Santiago, Vicente D.
Santos, José.
Saturnino, Juan.
Sodusta, Feliciano.
Tirona, Maria.
Ycasiano, Guadalupe.
Yulo, Teresa.

Special students (36)

Abada, Pablo.
Africa, Francisco M.
Agdamag, Crispulo.
Bonifacio, Arsenio.
Caedo, José.
Candidado, Manuel.
Clapp, Hilary P.
Cordero, Elisa.
Cordero, Pacita.
Cosin, Antonio.
Cruz, Vicente.
Cuajunco, Fidel.
Ejercito, Pilar.
Frondoso, Gregorio.
Gemil, Miguela.
Gokee, Francisco.
Gonzaga, Encarnacion.
Hilario, José M.
Hilario, Vicente M.
Katigbak, José M.
Laki, José.
Leon, Sancho de.
Lesaca, José V.
Licup, Lorenzo.
Macasaet, Paulo.
Maramag, Fernando M.
Morin, José.
Pascual, Anicio P.
Rivera, Godofredo.
Rotea, Santiago G.
San José, Crescenciano.
Scheerer, Adolfo.
Sena, Gaviño de.
Sorreta, Pedro D. L.
Tomeldan, José E.
Zafra, Dolores.

Total attendance, College of Liberal Arts, 215.

THE UNIVERSITY OF THE PHILIPPINES

THE COLLEGE OF MEDICINE AND SURGERY

(PHILIPPINE MEDICAL SCHOOL)

SIXTH ANNUAL ANNOUNCEMENT AND CATALOGUE

SECRETARY'S OFFICE

COLLEGE OF MEDICINE AND SURGERY, 547 CALLE HERRAN, ERMITA

Open daily from 8 a. m. to 12 m., and from 1 p. m. to 4 p. m.; Saturday, 8 a. m. to 1 p. m. For catalogues and other information address the Secretary.

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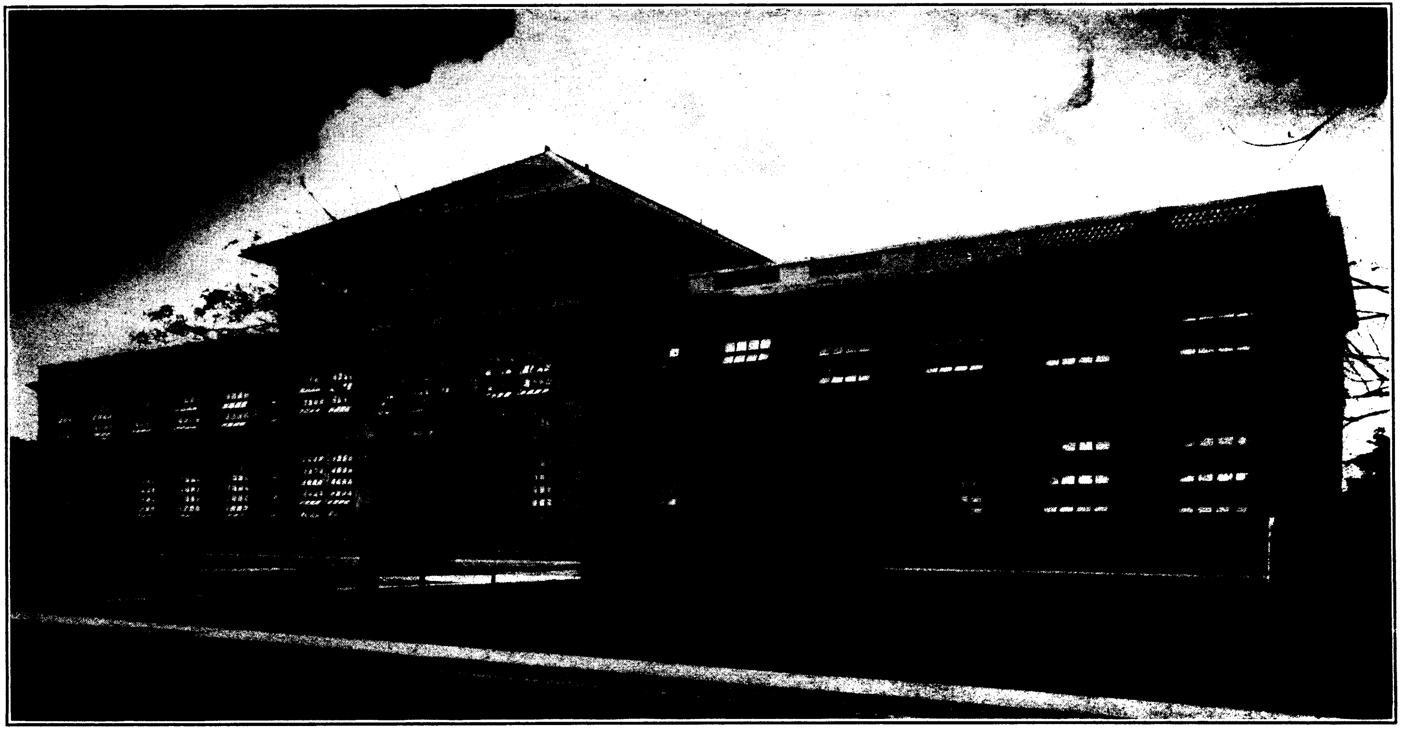

COLLEGE OF MEDICINE AND SURGERY

(Philippine Medical School)

HISTORY OF THE COLLEGE OF MEDICINE AND SURGERY[1]

The College of Medicine and Surgery is an outgrowth of the educational system instituted throughout these Islands by the Philippine Commission, and it is also a natural development of the Bureau of Science and the Bureau of Health.

The movement looking toward the establishment of such a school had its origin at the Second Annual Meeting of the Philippine Islands Medical Association in 1905, at which meeting the proceedings demonstrated the great need of supplying physicians to the people of these Islands. Statistics show that there is one physician to each 21,209 of the population of the Archipelago, or to each 430 square miles of territory.

The Philippine Medical School was established by the Philippine Commission as the first department of the future University of the Philippines and was opened for the instruction of students June 10, 1907.

The Philippine Medical School was founded in accordance with the following Act:

Act No. 1415.—An Act establishing a Medical School and defining the manner in which it shall be controlled and conducted.

By authority of the United States, be it enacted by the Philippine Commission, that:

SECTION 1. There is hereby established in the city of Manila a medical school for the purpose of giving instruction to qualified students. It shall be known as the Philippine Medical School.

The school is hereby made a body corporate, but shall be reincorporated under the new corporation law as soon as the same is enacted.

SEC. 2. The powers of the corporation until reincorporated as above provided are hereby vested in a body to be known as "the board of control of the Philippine Medical School" which shall consist of the Secretary of Public Instruction, the Secretary of the Interior, one member of the Philippine Commission, and one other member to be designated by the Governor-General. The dean of the faculty of the school, after the establishment of said faculty, also shall be a member of the board of control.

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[1] The College of Medicine and Surgery was established by the Government of the Philippine Islands as the Philippine Medical School in accordance with Acts Nos. 1415 and 1870.

SEC. 3. The board of control shall have the following powers:

(*a*) To receive endowments and bequests and to provide for their investment and disbursement according to the conditions of the endowment or bequest.

(*b*) To fix the matriculation fee, the graduation fee, and fees for laboratory courses.

(*c*) To receive and appropriate for the ends specified by law such sums as may be provided for the support of the school by legislation of the Philippine Commission.

(*d*) To recommend to the Governor-General, for appointment, the faculty of the school and fix the duties and responsibilities of its members, subject to the provisions of this Act.

(*e*) To confer the degree of Doctor of Medicine upon such persons as are recommended by the faculty.

(*f*) To make to the Philippine Commission recommendations in regard to the school and to present estimates for appropriations necessary for its maintenance.

(*g*) To make all necessary by-laws.

SEC. 4. Upon request of the board of control, heads of Bureaus and Offices of the Insular Government are authorized to loan such apparatus and supplies as may be required and to detail employees for duty in the Medical School, and employees so designated shall perform such duty and the time so employed shall count as part of their prescribed service to the Government. Bureaus and Offices loaning supplies to the Medical School shall, if the same are expended by the school, be reimbursed from the appropriation against which the expenses of the Medical School are a proper charge.

SEC. 5. The public good requiring the speedy enactment of this bill, the passage of the same is hereby expedited in accordance with section two of "An Act prescribing the order of procedure by the Commission in the enactment of laws," passed September twenty-sixth, nineteen hundred.

SEC. 6. This Act shall take effect on its passage.

Enacted, December 1, 1905.

The Philippine Medical School became a college of the University of the Philippines, and its name was changed to the "College of Medicine and Surgery," by section 6, paragraph (*b*), of Act 1870, which, as amended by Act No. 2024, reads as follows:

To provide for the establishment of a College of Liberal Arts; a College of Law; a College of Social and Political Science; a College of Medicine and Surgery; a College of Pharmacy; a College of Dentistry; a College of Veterinary Science; a College of Engineering; a College of Mines; a College of Agriculture; and a School of Fine Arts; and Colleges which the Legislature may provide for by appropriation: *Provided,* That the Board of Regents may establish these colleges or any of them as soon as in its judgment conditions shall favor their opening and funds shall be available for their maintenance: *And provided further,* That the Board of Regents, by and with the approval of the Governor-General, shall have the power to combine two or more of the colleges authorized by this Act, in the interests of economy and efficiency: *And provided further,* That the Philippine Medical School, as established by Act Numbered Fourteen hundred and

fifteen, as amended, shall become the College of Medicine and Surgery of the Philippine University as soon as two or more colleges of the University of the Philippines shall have been established and in actual operation.

On December 8, 1910, the provisions of Act No. 1870 having been complied with, the control and management of the school passed to the Board of Regents, and in accordance with said act the name was changed to "College of Medicine and Surgery."

THE NEW HOSPITAL AND MEDICAL SCHOOL BUILDINGS

In the year 1908 the Philippine Commission appropriated the sum of ₱780,000 for the construction of a modern hospital of reinforced concrete, planned on the pavilion system, to accommodate 350 patients. Additional wards can be added in the future, the final capacity being 1,500 patients. This institution, known as the Philippine General Hospital, was completed and opened to the public on September 1, 1910. At the time of providing for the hospital the Philippine Commission set aside the sum of ₱250,000 for a Medical School laboratory building, to be erected on the same campus as the Bureau of Science and the hospital.

The Medical School building was completed and opened for class work and instruction on July 1, 1910. It is a modern reinforced concrete structure with a total frontage of 68.54 meters, embracing a main entrance flanked by general offices and faculty room, of 18.40 meters width, and two wings of 25.07 meters each. The two wings are 15 meters deep.

In one wing on the first floor is the general laboratory of bacteriology and pathology, pathological museum, and private laboratory of the chief of the department. The other first-floor wing is occupied by the general chemistry laboratory, advanced chemistry laboratory, balance room, and private laboratory.

In one wing of the second floor are located the laboratory of histology and embryology, the library and anatomical museum, and the private laboratories of the chiefs of the departments of anatomy and zoölogy. In the other wing is the general laboratory of physiology, the laboratories of physiological chemistry and experimental surgery, and the private laboratory of the chief of the department.

The main building, or center, is 18.40 meters wide by 50 meters deep. On the ground floor are the general office, faculty room, main corridor or lobby, storeroom, autopsy room and cold storage room for bodies. On the second floor are the laboratory of pharmacology, the private laboratory of the chief of that department, two general lecture rooms and an amphitheatre equipped with a reflectoscope. Each lecture room has a seating capacity of about fifty students; that of the amphitheatre is about one hundred and twenty. The third floor of the building is given over to the department of anatomy. It is divided into two dissection rooms, cross-section, brain, and osteology rooms, and a private laboratory of the chief of the department of anatomy. All these floors are equipped with modern wash and toilet rooms.

The city morgue is located in the rear of the Medical School. All autopsies are performed by the department of pathology, and are available for study by the students.

Faculty of the College of Medicine and Surgery

MURRAY BARTLETT,
President of the University.

PAUL CASPAR FREER, M. D., Ph. D.,
Dean of the College of Medicine and Surgery; Professor of Chemistry.

JOSE ALBERT, M. D.,
Professor of Pediatrics.

ARISTON BAUTISTA Y LIN, M. D.,
Professor of Clinical Medicine and Therapeutics.

FERNANDO CALDERON, M. D.,
Professor of Obstetrics.

VICTOR G. HEISER, B. A., M. D.,
Professor of Hygiene.

JOHN RICH McDILL, M. D.,[1]
Professor of Surgery.

WILLIAM EVERETT MUSGRAVE, M. D.,
Professor of Clinical Medicine, Chief of Clinics.

RICHARD PEARSON STRONG, Ph. B., M. D.,
Professor of Tropical Medicine.

VERNON LEE ANDREWS, M. D.,
Associate Professor of Pathology and Bacteriology.

HANS ARON, M. D., Ph. D.,
Associate Professor of Physiology.

ELBERT CLARK, B. S.,
Associate Professor of Anatomy.

CARROLL FOX, M. D.,
Associate Professor of Hygiene.

HARRY DRAKE GIBBS, B. S.,
Associate Professor of Chemistry.

PHILIP KINGSNORTH GILMAN, B. A., M. D.,
Associate Professor of Surgery.

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. D.,
Associate Professor of Zoology.

ERNEST LINWOOD WALKER, B. A. S., S. B., S. D.,
Associate Professor of Medical Zoology.

ALFRED OGLE SHAKLEE, B. S., M. D.,
Associate Professor of Pharmacology.

---

[1] Resigned.

TEACHING STAFF

PROFESSORS

PAUL CASPAR FREER, M. D., Ph. D.,
Professor of Chemistry,
Bureau of Science, Manila.

JOSE ALBERT, B. A., M. D.,
Professor of Pediatrics,
143 Camba, San Nicolás, Manila.

ARISTON BAUTISTA Y LIN, M. D.,
Professor of Clinical Medicine and Therapeutics,
51 Plaza de Santa Cruz, Manila.

FERNANDO CALDERON, B. A., M. D.,
Professor of Obstetrics,
82 Barbosa, Quiapo, Manila.

VICTOR GEORGE HEISER, B. A., M. D.,
Professor of Hygiene,
Bureau of Health, Manila.

JOHN RICH McDILL, M. D.,[1]
Professor of Surgery,
Philippine General Hospital, Manila.

WILLIAM EVERETT MUSGRAVE, M. D.,
Professor of Clinical Medicine, Chief of Clinics,
Philippine General Hospital, Manila.

RICHARD PEARSON STRONG, Ph. B., M. D.,
Professor of Tropical Medicine,
Biological Laboratory, Bureau of Science, Manila.

ASSOCIATE PROFESSORS

VERNON LEE ANDREWS, M. D.,
Associate Professor of Pathology and Bacteriology,
College of Medicine and Surgery.

HANS ARON, M. D., Ph. D.,
Associate Professor of Physiology,
College of Medicine and Surgery.

ELBERT CLARK, B. S.,
Associate Professor of Anatomy,
College of Medicine and Surgery.

CARROL FOX, M. D.,
Associate Professor of Hygiene,
Bureau of Health, Manila.

HARRY DRAKE GIBBS, B. S.,
Associate Professor of Chemistry.
Bureau of Science, Manila.

PHILIP KINGSNORTH GILMAN, B. A., M. D.,
Associate Professor of Surgery,
Calle Looban, Manila.

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. B., Ph. D.,
Associate Professor of Zoology,
12 Gun Club Lane, Malate, Manila.

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[1] Resigned.

ASSOCIATE PROFESSORS—Continued

LUIS GUERRERO, M. D.,
Associate Professor of Tropical Medicine,
86 Isaac Peral, Ermita, Manila.

REINHARD REMBE, M. D.,
Associate Professor of Ophthalmology, Otology, and Laryngology,
Philippine General Hospital.

BALDOMERO ROXAS, M. D.,
Associate Professor of Obstetrics,
17 Sales, Santa Cruz, Manila.

ALFRED OGLE SHAKLEE, B. S., M. D.,
Associate Professor of Pharmacology,
College of Medicine and Surgery.

ERNEST LINWOOD WALKER, B. A. S., S. B., S. D.,
Associate Professor of Medical Zoology,
Biological Laboratory, Bureau of Science, Manila.

ASSISTANT PROFESSORS

RHEINART PARKER COWLES, B. A., Ph. D.,
Assistant Professor of Zoology,
College of Medicine and Surgery.

RUSKIN LHAMON, B. A., M. D.,
Assistant Professor of Anatomy,
College of Medicine and Surgery.

MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S.,
Assistant Professor of Chemistry,
College of Medicine and Surgery.

DAVID WILLETS, Ph. B., M. D.,
Assistant Professor of Medical Zoology,
Biological Laboratory, Bureau of Science, Manila.

HANS ERNST SCHIFFBAUER, M. D.,
Assistant Professor of Surgery,
College of Medicine and Surgery.

ANTONIO GUILLERMO SISON, B. A., M. A., M. D.,
Instructor in Clinical Medicine,
College of Medicine and Surgery.

LECTURERS ON SPECIAL TOPICS

CHARLES SUMNER BANKS, M. S.,
Lecturer on Medical Entomology,
Biological Laboratory, Bureau of Science, Manila.

ROBERT E. L. NEWBERNE, M. D.,
Lecturer on Nervous and Mental Diseases, and Medical Jurisprudence,
Bureau of Health, Manila.

ERNEST HENRY RUEDIGER, M. D.,
Lecturer on Immunity and Serum Therapy,
Biological Laboratory, Bureau of Science, Manila.

OTHER OFFICERS OF INSTRUCTION

POTENCIANO GUAZON, B. A., M. D.,
Instructor in Surgery,
College of Medicine and Surgery, Manila.

JOSE EDUQUE, M. D.,
Instructor in Surgery,
College of Medicine and Surgery, Manila.

JOSE IGNACIO DEL ROSARIO, B. A., M. S.,
Instructor in Chemistry.

SALVADOR VIVENCIO DEL ROSARIO, B. A., M. D.,
Instructor of Hygiene,
Bureau of Health, Manila.

ROY WALLACE HAMMACK, B. A., M. D.,
Instructor in Bacteriology and Pathology,
College of Medicine and Surgery, Manila.

ARISTEO R. UBALDO, B. A., L. M.,
Assistant in Opthalmology,
College of Medicine and Surgery, Manila.

LEONCIO AMADOR LOPEZ, B. A., M. D.,
Assistant in Pediatrics,
College of Medicine and Surgery, Manila.

HONORIA ACOSTA SISON, M. D.,
Assistant Obstetrics,
College of Medicine and Surgery, Manila.

JOSE HILARIO, M. D.,
Demonstrator in Pathology and Bacteriology,
College of Medicine and Surgery, Manila.

FELIX HOCSON, B. A., Phar. Ch.,
Demonstrator in Physiology,
College of Medicine and Surgery, Manila.

JESUS GONZALES, B. A., M. D.,
Extern (Dispensary service),
College of Medicine and Surgery, Manila.

DANIEL DE LA PAZ, M. D.,
Assistant in Pharmacology,
College of Medicine and Surgery, Manila.

MIRIAM E. GRIFFIN, B. A., M. D.,
Instructor in Hygiene,
(Detailed to the Bureau of Health.)

COURT R. STANLEY, M. D.,
Intern,
College of Medicine and Surgery, Manila.

HOSPITAL STAFF

VICTOR GEORGE HEISER, B. A., M. D.,
Director,
Philippine General Hospital.

WILLIAM EVERETT MUSGRAVE, M. D.,
Chief of Clinics and Chief of the Division of Clinical Medicine,
Philippine General Hospital.

RICHARD PEARSON STRONG, Ph. B., M. D.,
Chief of the Department of Medicine,
Philippine General Hospital.

JOHN RICH McDILL, M. D.,[1]
Surgeon in Chief and Chief of the Department of Surgery,
Philippine General Hospital.

PAUL C. FREER, M. D., Ph. D.,
Chief of the Department of Pathology.

REINHARD REMBE, M. D.,
Chief of the Department of Ophthalmology, Otology, and Laryngology,
Philippine General Hospital.

PHILIP KINGSNORTH GILMAN, B. A., M. D.,
Associate in the Department of Surgery,
Philippine General Hospital.

DAVID WILLETS, Ph. B., M. D.,
Resident Pathologist,
Philippine General Hospital.

HANS ERNST SCHIFFBAUER, M. D.,
Resident Surgeon,
Philippine General Hospital.

ANTONIO GUILLERMO SISON, B. A., M. A., M. D.,
Acting Resident in Medicine,
Philippine General Hospital.

POTENCIANO GUAZON, B. A., M. D.,
First Assistant Resident in Surgery,
Philippine General Hospital.

ARISTEO R. UBALDO, B. A., L. M.,
Intern in Ophthalmology,
Philippine General Hospital.

HONORIA ACOSTA SISON, B. A., M. D.,
First Assistant Resident in Obstetrics,
Philippine General Hospital.

JOSE EDUQUE, M. D.,
Second Assistant Resident in Surgery,
Philippine General Hospital.

LEONCIO AMADOR LOPEZ, B. A., M. D.,
Second Assistant Resident in Pediatrics,
Philippine General Hospital.

COURT R. STANLEY, M. D.,
Intern,
Philippine General Hospital.

JESUS GONZALEZ, B. A., M. D.,
Extern,
Philippine General Hospital.

---

[1] Resigned.

STANDING COMMITTEES OF THE COLLEGE

COMMITTEE ON ADMISSIONS

Doctor GRIFFIN.
Doctor ANDREWS.
Doctor VIVENCIO DEL ROSARIO.

CLINICAL COMMITTEE

Doctor MUSGRAVE,
Chairman and Chief of Clinics.
Doctor STRONG.
Doctor CALDERON.
Doctor BAUTISTA Y LIN.
Doctor GILMAN.
Doctor ALBERT.
Doctor GUERRERO.
Doctor ROXAS.

CATALOGUE COMMITTEE

Doctor MUSGRAVE.
Doctor GRIFFIN.
Doctor KEMP.

LIBRARY COMMITTEE

Doctor FREER.
Doctor GRIFFIN.
Doctor ANDREWS.
Doctor CLARK.

Secretary and Registrar of the College of Medicine and Surgery,
JAMES FINLEY KEMP, M. D.

ADMISSION REQUIREMENTS

All candidates who desire to enter the school must pass a physical examination before being admitted. This examination will be held at the College of Medicine and Surgery on Monday, June 17, 1912. No candidate will be allowed to take the entrance examinations who is refused by the examining physician.

The previous education of the candidates must have been sufficient to fit them to study medicine. This means, practically, that the candidates should be graduates of a thorough four-year high-school course or its equivalent.

The candidates must submit to the secretary of the College of Medicine and Surgery, before May 15, a certified statement of all marks obtained in studies of high-school grade, and a certificate of honorable discharge from the school last attended.

All candidates must pass an examination satisfactory to the faculty of the College of Medicine and Surgery in the following subjets:

1. English.
2. General History.
3. United States History and Government.
4. Elementary Algebra.
5. Plane Geometry.
6. Latin, 2 years.
7. French, German, or Spanish.
8. Botany, 1 year.
9. Physics, 1 year.
10. Chemistry, 1 year.
11. Zoölogy, 2 years.

Details for these entrance requirements will be found on page 31. Candidates should particularly note the requirements in regard to laboratory note books in the sciences.

The examinations will be given in English, and all papers written by the candidates must be in English. The ability to speak and write good English is a most necessary qualification for a student of medicine.

Entrance examinations for the College of Medicine and Surgery will be given at those high schools having a graduating class at the close of the present school year. Those desiring to take the examination at that time should make proper arrangements with the principal of the school in advance. Entrance examinations will also be held at the College of Medicine and Surgery, Manila, commencing at 8 a. m., Monday, June 17, 1912.

No credit will be allowed candidates for having passed any entrance requirements in a previous examination of the Philippine Medical School, or in any other examination whatsoever.

Students may be admitted to the College of Medicine and Surgery with conditions in entrance requirements, but such students must remove these conditions and study such other subjects as the faculty may require, in the College of Liberal Arts, before being admitted to the study of anatomy.

In addition to presenting their grades in botany, zoölogy, chemistry, and physics, candidates must present their laboratory notebooks in these subjects in order that the faculty of the College may judge the character of the work done.

In the year 1914, candidates for admission to the College of Medicine and Surgery must have completed two years of college work. The preparatory course for medicine is outlined on page 71. Students who have completed this course in the College of Liberal Arts of the University of the Philippines, or in any other accredited school, will be admitted without entrance examinations in the year 1913 and thereafter.

EXAMINATIONS

Examinations will be held at the end of each semester, upon the completion of each subject, and at such other times as the teacher in charge of a course may elect.

Candidates may be admitted and students passed from one class to the next with a condition in one or more subjects, at the discretion of the faculty. In general, no student will be admitted with more than two conditions; conditioned entrance subjects must be passed before the beginning of the school year following that in which they were obtained.

Conditions in subjects of the medical course must be passed before the beginning of the succeeding school year.

Students may be separated from the school at any time by vote of the faculty.

The dean may suspend students at any time, pending action of the faculty.

In order to graduate a student must have passed all subjects required for entrance and for the medical course, and his graduation must then be recommended by the University Council and approved by the Board of Regents.

ADMISSION TO ADVANCED STANDING

Applicants for admission to advanced standing must—

(1) Submit evidence of their previous studies which shall be satisfactory to the faculty.

(2) Pass examinations in each subject of the medical course which has been passed by the students of the class which they desire to enter.

(3) Have studied as matriculated medical students in an approved medical school for a period of time at least equal to that already spent by the class which they seek to enter.

Candidates for graduation on advanced credit must complete at least the last three years of their medical studies in this school unless express permission for a different arrangement has been obtained from the faculty.

(4) Candidates will be admitted to examinations for advanced standing only upon special authority granted by a vote of the faculty. Such examinations will be held only at the time of the regular entrance examinations.

SPECIAL STUDENTS

Students desiring to take a special course in the College of Medicine and Surgery must meet the same entrance requirements as regular students. They will be admitted only upon recommendation of a special committee, and by vote of the faculty. The courses offered to a special student do not lead to a degree.

REQUIREMENTS FOR GRADUATION.

At the end of his medical studies, a student who has passed all of the required examinations satisfactorily will receive the degree of Doctor of Medicine under the following conditions:

1. He must be at least 21 years of age and of a reputable character.
2. He must have passed all the examinations for admission to this Medical College, and he must have completed as a regularly matriculated medical student a five-years course of medical study equivalent in its standards to that given here, of which the last three years must be spent in this college, unless permission for a different arrangement has been obtained from the faculty.

COURSES FOR GRADUATES IN MEDICINE

The faculty, at its discretion, may arrange for special courses of an elementary advanced character in any of the subjects taught in this school, if a sufficient number of graduates in medicine make application for such instruction.

The Board of Regents has authorized a course for graduates in medicine leading to the degree of Doctor of Public Health. This course covers two years of graduate study as well as a thesis satisfactory to the faculty of the College of Medicine and Surgery.

THE GERMINAL PRIZE

The Germinal Tobacco Factory offers a prize of a microscope or a set of surgical instruments to the student of the graduating class having the highest general average.

MICROSCOPES AND LABORATORY APPARATUS

The college is equipped with a sufficient supply of microscopes and other clinical and laboratory apparatus for the use of the students.

Owing to the constant use that is made of microscopes during the laboratory courses and in clinical studies, each student must have a microscope for his own use, and it is recommended that he purchase one. Otherwise the students may obtain microscopes upon a memorandum receipt from the college, and the payment of a rental of ₱5 a semester. The microscopes must be returned in good condition, or charges for repairs will be made against the students.

DEPOSIT

Each student must deposit ₱20 with the secretary before beginning any and every laboratory course. The cost of all apparatus and special supplies issued to the student will be charged against this deposit.

Further deposits will be required if needed to cover the cost of supplies issued to the student. The student will be credited at the end of the course for the apparatus and supplies returned to the property clerk in good condition.

FEES

A laboratory fee of ₱5 per semester will be charged in those laboratory courses giving not more than three hours credit; ₱10 will be charged for laboratory courses giving more than three hours' credit.

LIBRARY FACILITIES

The library of the Bureau of Science is open to the students of the College of Medicine and Surgery. This library of 20,000 bound volumes and 18,000 unbound pamphlets is particularly rich in medical literature, subscribing for and having complete files of all the important medical publications.

CLINICAL FACILITIES

The services for the teaching of clinical medicine and surgery consist in the control of beds in the Philippine General Hospital; Bilibid Prison Hospital; the Hospital for Infectious Diseases of San Lazaro, with its departments for incurable tuberculosis, smallpox, diphtheria, plague, cholera, and other dangerous communicable diseases; San Juan del Monte Tuberculosis Sanitarium; the Gota de Leche for the feeding and care of abnormal and underdeveloped children; the Free Dispensary of the Philippine General Hospital; the Municipal and Tuberculosis Free Dispensaries of the city of Manila.

The personnel of all these institutions both in administration and in the care of the patients is identical with that of the teaching faculty of the Medical College; the college thus has control of a large amount of clinical material in a manner not equalled by many other medical schools.

The Philippine General Hospital is a large, modern, concrete, well-equipped pavillon hospital for the care of acute and curable diseases. It is administered, as are all other Government hospitals, by the Bureau of Health; its professional staff is entirely made up of the faculty of the College of Medicine and Surgery of the University of the Philippines. This institution is caring for about 500 patients. The Bilibid Prison Hospital draws its material from the inmates of the prison and is a valuable source of teaching material, particularly in those medical and surgical conditions peculiar to warm countries.

The infectious disease hospital at San Lazaro is well equipped for the care of dangerous, contagious, and epidemic diseases, and the material provided in this institution is ample for the instruction of students in this class of diseases.

The San Juan Tuberculosis Sanitarium, the free dispensaries of the city, and Gota de Leche, all furnish a great deal of outpatient material for teaching purposes.

Taken altogether, the college has under its control more valuable clinical material, covering the widest possible range of disease conditions, than it can possibly use to the best advantage of the students. During the last year, more than 50,000 patients passed through the clinics under the control of the College of Medicine and Surgery.

DEPARTMENTS OF INSTRUCTION

DEPARTMENT OF ZOOLOGY

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. D., Associate Professor of Zoology, Chief of Department.
RHEINART PARKER COWLES, B. A., Ph. D., Assistant Professor of Zoology.
LAWRENCE DILLER WHARTON, B. A., Instructor in Zoology.

Zoölogy 1ab. Comparative Zoölogy.—1 to 3.30 p. m., Monday, Tuesday, Wednesday, first and second semesters. Animal Biology 1 consists of laboratory work and recitations. The course is designed to prepare the student for his work in medical zoölogy, and to afford a basis of comparative anatomy for the proper understanding of human anatomy, histology, and embryology. Not all of the phyla of the invertebrate animals can be studied, so a selection of important forms of Protozoa, Coelenterata, Platyhelminthes, Nemathelminthes, Mallusca, and Insecta will be made. A shark, lizard, bird, and mammal will be dissected as types of vertebrates.

Text-book: Parker and Haswell, Text-book of Zoölogy.

Course 1ab is required of all students of medicine.

[7½ hours throughout the year; 6 units.
Associate Professor GRIFFIN.
Assistant Professor COWLES.

Zoölogy 3 and 4. General Biology (prerequisite, Zoölogy 1 and 2).—A course in which the nature and reactions of living substance and general biological laws and relations will be studied. Certain groups of animals will be studied in more detail, and with greater attention to the needs of the medical student than is possible in an elementary course. Particular attention will be paid to the biology of the Protozoa, and of the parasitic worms, to the venoms of snakes and other poisonous animals, and to general considerations of the cell. Further subjects considered will be the fundamental manifestations of life, reproduction, structural relationship, the effects of parasitism, regeneration, theories of heredity and evolution, the biology of infection and immunity. A number of lectures will be devoted to the history of the development of the biologic sciences.

The courses will consist of lectures, accompanied by illustrative laboratory work.

Text-books: Parker and Haswell, Text-book of Zoölogy; McFarland, Biology, General and Medical; Darwin, Origin of Species.

[9 hours throughout the year; 6 units.
Associate Professor GRIFFIN.
Assistant Professor COWLES.
Mr. WHARTON.

DEPARTMENT OF ANATOMY

ELBERT CLARK, B. S., Associate Professor of Anatomy, Chief of Department.
RUSKIN LHAMON, B. A., M. D., Assistant Professor of Anatomy.
——— ———, Laboratory Assistant.
——— ———, Laboratory Assistant.

The courses of study provide for instruction in gross human anatomy, embryology, histology, neurology, and topographical anatomy.

Anatomy 1. Systematic Anatomy.—This course embraces the complete dissection of the human body, including the bones and joints, and a study of cross sections of the body and parts. Sec-

PHILIPPINES GENERAL HOSPITAL

tion A includes the dissection of the arm and wall of the thorax; section B the dissection of the abdomen and leg; section C the dissection of the head, neck, and thoracic viscera. Abundance of dissecting material and the size of the classes make it possible to include all the first-year students in one section. The dissection proceeds in the order named above and fresh material is obtained as needed. Laboratory work and occasional lectures.

[First year. Mornings, 7.30 to 11.30.
Associate Professor CLARK.
Assistant Professor LHAMON.
Mr. ——— ———.

Anatomy 2. Histology.—Lectures, recitations, and laboratory work with demonstrations. The tissues and organs will be studied in the fresh state and by means of stained sections. Required of all first-year medical students.

First year, first semester; Thursday, Friday, and Saturday, 10.30 to 11.30 a. m.; laboratory Thursday and Friday, 1 to 4 p. m.

[9 hours; 3 units.
Associate Professor CLARK.
Assistant Professor LHAMON.

Anatomy 3. Embryology.—Lectures, recitations, and laboratory work. The laboratory work consists largely of the study of the development of the duck and pig. This is accompanied by lectures and recitations on human embryology. A large series of models of the development of various organs and animals is available for the use of students.

This course is required of first-year medical students and is open to any others who are qualified. Laboratories, 1 to 4 p. m., Thursday and Friday; recitations, 10.30 to 11.30 a. m., Thursday, Friday, Saturday; second semester.

[9 hours; 3 units.
Assistant Professor LHAMON.
Associate Professor CLARK.

Anatomy 4. Topographical Anatomy.—A laboratory course in human anatomy, including special dissections and the study of models, preparations, and transverse sections. First part of first semester of second year, mornings, 7.30 to 11.30.

Associate Professor CLARK.

Anatomy 5. Elementary Neurology.—An elementary course on the structure of the central nervous system and the organs of special sense. The student makes a careful study and dissection of the human adult brain and spinal cord after having examined the various stages of development of the central nervous system in the fœtuses of mammals. The microscopic structure, including demonstrations of the central nervous system and organs of special sense is also taken up. Lectures, recitations and laboratory work. Second part of first semester of second year, mornings 7.30 to 11.30.

Associate Professor CLARK.

Anatomy 6.—The third-year class may attend practical demonstrations of surgical anatomy, or repeat a dissection.

Lectures, lantern-slide illustrations, and demonstrations of cross sections, dissected parts, special preparations, and histological specimens will accompany the various courses, and the work will be made as simple and practical as possible. Each student will be required to perform careful dissections and to become familiar with the gross and microscopic appearance of the various tissues and organs of the human body. Physicians, and students not candidates for a degree may be admitted to the course by special arrangement. Capable students will be permitted to undertake special dissections and preparations.

DEPARTMENT OF CHEMISTRY

PAUL CASPAR FREER, M. D., Ph. D., Professor of Chemistry, Chief of Department.
HARRY DRAKE GIBBS, B. S., Associate Professor of Chemistry.
MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S., Assistant Professor of Chemistry.
JOSE IGNACIO DEL ROSARIO, B. A., M. S., Instructor in Chemistry.

Chemistry 1. General Chemistry (prerequisite, high-school chemistry 1).—Lectures, demonstrations, recitations, and laboratory work. The course covers the fundations and principles of organic chemistry. Second semester of the first year.

Professor FREER.
Assistant Professor DEL ROSARIO.

Chemistry 2. Elementary Qualitative Analysis (prerequisite, Chemistry. 1).—Lectures, recitations, and laboratory work. [First semester of the second year. Assistant Professor DEL ROSARIO.

Chemistry 3. Volumetric Analysis (prerequisite, Chemistry 1).—Lectures, recitations, and laboratory work. Last part of the first semester of the second year.

Assistant Professor DEL ROSARIO.

Chemistry 4. Physiological Chemistry (prerequisite, Chemistry *3*).—Lectures and laboratory work. The laboratory work will complete the course in organic chemistry. The study of foodstuffs such as carbohydrates, fats, and protein will be taken up and the action of the enzymes on these substances will be discussed. The analytical part will consist of the analysis of the blood, gastric juice and urine and, if time permits, the analysis of milk.

Assistant Professor DEL ROSARIO.

DEPARTMENT OF PHYSIOLOGY

HANS ARON, M. D., Ph. D., Associate Professor of Physiology, Chief of Department.
FELIX HOCSON, B. A., Phar. Ch., Demonstrator in Physiology.

The department of physiology is fully equipped with all modern laboratory apparatus and facilities.

(*a*) The laboratory of general physiology is equipped with fixed and movable work tables, each having two sinks, with water, gas, and electricity. Special tables are arranged with drawers and lockers for microscopic work.

(*b*) The laboratory of biochemistry has the usual complement of work tables and two large hoods, with gas, water, steam, and electricity.

(*c*) The private laboratory of the chief of the department is fully equipped with tables, gas, water, steam, and electricity, instrument cases, and reference library.

(*d*) An animal house with cement floor, water, and the necessary cages, is located on the same campus as the school.

(*e*) An operating room for animals is used in common with the department of surgery.

Instruction is given to the students during the second semester of the second year and during the first semester of the third year.

Second year, second semester, six periods of four hours each per week.

Third year, first semester, two periods of three hours each per week.

During the first semester five hours each week are devoted to lectures, with demonstrations; one to two hours each week to recitations; and eighteen hours each week to laboratory work.

In the second semester two hours are devoted to lectures, and the remaining four hours to laboratory work and recitations.

The entire subject of physiology is discussed by means of lectures. No text-book is followed strictly. For purposes of study the following text-books are recommended: W. H. Howell, Text-book of Physiology; W. D. Halliburton, Handbook of Physiology; Tigerstedt-Murlin, A Text-book of Human Physiology.

The laboratory course is so given that the experiments follow closely the topics discussed. Typewritten directions covering the various experiments are furnished the students and as laboratory guides the following books are recommended: T. G. Brodie, Essentials of Physiology; W. D. Halliburton, Essentials of Chemical Physiology.

Students are required to perform individually all the simple experiments. Other experimental work is performed in groups of from three to six students.

The course of study is divided and arranged as follows:

First semester of instruction (second semester of the second year).

First to third week: General introduction. Blood and lymph.

Fourth and fifth week: Heart, circulation of the blood, blood pressure, pulse.

Sixth week: Respiration.

Seventh to eleventh week: Digestion, secretion, nutrition, including selected physiological chemistry.

Twelfth week: Animal heat.

Thirteenth to sixteenth week: Physiology of the cell and muscle.

Second semester of instruction (first semester of the third year).

First to fourth week: General physiology of the nervous system.

Fifth to eighth week: Special physiology of the nervous system.

Ninth and tenth weeks: General physiology of the senses; skin.

Eleventh to thirteenth week: Physiology of the eye.

Fourteenth week: Physiology of the ear.

Fifteenth week: Physiology of taste and smell.

DEPARTMENT OF PHARMACOLOGY, TOXICOLOGY, AND MATERIA MEDICA

ALFRED OGLE SHAKLEE, B. S., M. D., Associate Professor of Pharmacology, Chief of Department.

——— ———, Assistant Professor of Pharmacy.

DANIEL DE LA PAZ, M. D., Assistant in Pharmacology.

——— ———, Assistant in Pharmacy.

Instruction.—The province of the department of pharmacology embraces the fields occupied by materia medica, pharmacy, pharmacodynamics, pharmacal therapeutics, and toxicology. The courses offered in pharmacology aim to furnish a knowledge of drugs and a training in their study and application sufficient to meet the needs of the physician and the surgeon on the one hand, and of the pharmacist on the other. It also aims to arouse the spirit of research in the student and to foster research along all pharmacological lines. As far as possible laboratory work by the individual student is made the basis of instruction. It is the aim to supplement the laboratory work and to illustrate the lectures with practical demonstrations in so far as circumstances will permit and the lecture work will have as close a coördination as possible with the laboratory work.

Although no text-book is followed in the courses, the student is expected to familiarize himself with some modern text on the subject under study and to make an intelligent use of reference books in connection with his laboratory and lecture work. For general pharmacology the medical student is recommended to secure some such book as Sollmann's Text-book of Pharmacology, Cushing's Pharmacology and Therapeutics, or Wood's Therapeutics, its Principles and Practice. For general pharmacy, the pharmacy student is recommended to secure some such book as

Remington's Practice of Pharmacy or Caspari's Treatise on Pharmacy.

Equipment.—The students' pharmacological laboratory is well lighted and hygienic and furnished with tables, lockers, and apparatus, both for chemical and pharmaceutical work and for animal experimentation. It is well supplied with chemicals, drugs, pharmaceutical preparations, water, gas, and electricity. There is a good, well-lighted, well-ventilated, and sanitary animal house and a sufficient supply of all the ordinary laboratory animals to meet the requirements of those courses demanding animal experimentation.

A working library is at hand in the pharmacological laboratory and all the important current scientific periodicals treating of pharmacological subjects as well as many complete bound sets of the back numbers are easily accessible to the students in the scientific division of the Philippines Library, housed in the neighboring buildings of the Bureau of Science.

COURSES IN PHARMACOLOGY

1. *Chemistry of Drugs.*—Laboratory and lecture third year, first term of first semester, 7.30 to 10.30 a. m., Monday and Wednesday (fifty-four hours).

An introductory laboratory course in materia medica and toxicology devoted to the study of the physical and chemical properties and of the reactions of the most important classes of drugs and drug constituents, including practice in identification of drugs and in detection of poisons. This is designed to give the medical student a real acquaintance with the representative drugs which he will later use in his study of pharmacodynamics and in the practice of medicine. It also furnishes a practical study of incompatibilities, and supplies a part of the knowledge essential to intelligent prescription writing.

2. *Inorganic Pharmaceutical Preparations.*—Three hours lecture and 6 hours laboratory; first semester (one hundred sixty-two hours).

In the lectures and recitations, the processes and principles of preparation and the properties, incompatibilities, and preservation of the inorganic substances used in medicine will be discussed. The advantages and disadvantages of pharmacopœial methods will also be considered, and also, where advisable, alternative preparations will be discussed. Among the preparations studied will be the preparations of inorganic acids, Hases, salts, and oxides; of halogens, metals, minerals, etc.

The laboratory work will consist in the making of the preparations and the study of their properties by means of appropriate tests.

3. *Galenical Preparations.*—Three hours lecture and 6 hours laboratory; second semester (one hundred sixty-two hours).

In this course various galenicals will be prepared and studied in the laboratory and discussed in the lectures. The course will include the preparation and study of waters, spirits, syrups, elixirs, glycerites, oleates, liniments, infusions, decoctions, tincture, fluid-extracts, extracts, etc.

4. *Plant Principles.*—Three hours lecture and 6 hours laboratory; first semester (one hundred sixty-two hours).

The sources, processes of isolation, properties, and preservation of the various plant principles used in medicine will be considered in this course. The principles will be studied in the laboratory and representative substances will be isolated from the raw material by the student. The lectures will be closely correlated with the laboratory work. The work will include a study of alcohols, aldehydes, ketones, organic acids, esters, etc.; phenols, terpenes, ammonia derivatives, cyclic bases, alkaloids, glucosides, saponins, volatile and fixed oils, fats, gum, resins, etc.

5. *Drug Assay.*—Three hours lecture and 6 hours laboratory; second semester (one hundred sixty-two hours).

This course is devoted to a practical study of the chemical assay of official drugs.

6. *Chemical Toxicology.*—Two hours lecture and 4 hours laboratory; second semester (one hundred and eight hours).

In the laboratory the student will study the reactions of the poisons and the processes of detection in the presence of other substances, including foods, stomach contents, tissues, etc.; and also, where practical, quantitative estimations will be made.

The substances studied will be taken up systematically and the lectures and laboratory work will supplement each other.

7. *Medical Pharmacy.*—Laboratory; third year, second term of first semester, 8.30 to 10.30 a. m., Monday and Wednesday (thirty-four hours).

A laboratory and conference course in the examination, preparation, and testing of important official and semiofficial drugs and their combinations, for the purpose of preparing the student for intelligent prescription writing. In this course the student will have some practice in filling his own prescriptions. This course accompanies the course in prescription writing.

Reference: United States Pharmacopœia, National Formulary, new and nonofficial remedies.

Associate Professor SHAKLEE.
Assistant Professor ———.
Dr. DE LA PAZ.

8. *Prescription Reading, Compounding, and Dispensing.*—Three hours lecture and 6 hours laboratory; second semester (one hundred sixty-two hours).

This course is devoted to a study of prescription Latin, prescription forms and abbreviations; the compounding of prescriptions and the dispensing of medicines. It includes a systematic study of incompatibilities and a review of pasology as it concerns the pharmacist.

9. *Prescription Writing.*—Lecture and conference; third year, second term of first semester, 7.30 to 8.30 a. m., Tuesday and Thursday (twenty-five hours).

A lecture and recitation course accompanying the laboratory course in medical pharmacy. It will consider official preparations with reference to their properties, preservation, compounding, dispensing, dosage, and administration. Approved formulæ will be studied and criticized. The essentials of prescription Latin will be presented; prescriptions will be written, discussed, and corrected, and the filled prescriptions demonstrated. The course is correlated with the course in medical pharmacy.

Associate Professor **SHAKLEE.**

10. *Experimental Medical Pharmacodynamics.*—Laboratory; third year, first semester, 8.30 a. m. to 12.30 p. m., Tuesday and Thursday (one hundred and thirty-six hours).

A laboratory course in pharmacodynamics in which the student studies the effect of drugs upon the animal organism, and becomes practically acquainted with the methods of investigation and the character of the data which underlie rational therapeutics. The course includes physiological standardization of drugs. This course is designed to form the basis for the lectures in the course in general medical pharmacology.

Associate Professor **SHAKLEE.**
Dr. **DE LA PAZ.**

11. *General Medical Pharmacology.*—Lecture and recitation; third year, first term of first semester, 7.30 to 8.30 a. m., Monday, Wednesday, Friday (twenty-five hours).

A lecture and demonstration course which treats of the direct and indirect actions of drugs in therapeutic doses upon the tissues and organs, and upon the organism of man as a whole, and of rational indications and contraindications for the exhibition of drugs in the treatment of disease. The course also discusses briefly the important pharmaceutical preparations, both official and semiofficial, and the methods of administration. The drugs are discussed in groups based upon similarity of action of therapeutic doses, and are so associated as to make easier the retention and recall of the multifarious facts of pharmacology important to the clinician, as well as to facilitate the selection of the drug or preparation best suited to any given condition. The course includes a discussion of the forms of poisoning of therapeutic importance and is accompanied by prescription writing. This course is closely correlated with the course in experimental medical pharmacodynamics.

Associate Professor SHAKLEE.

12. *Pharmacal Therapeutics.*—Lecture and Recitation; third year, second term of first semester, 7.30 to 8.30 a. m., Monday, Wednesday, Friday, (twenty-five hours).

A lecture and demonstration course on the application of drugs to the treatment of disease and of poisoning. In this course the use of drugs is viewed from the standpoint of the practitioner, and the point of departure in the study is the disease. Diseases are discussed in groups based upon similarity of treatment, and the aim is to associate the salient facts of drug therapy in such a way as to facilitate their recall in the presence of the condition demanding them. The course is accompanied by prescription writing.

Associate Professor SHAKLEE.

13. *Toxicological Pharmacodynamics.*—Two hours lecture and 6 hours laboratory; first semester (one hundred forty-six hours).

This is a lecture and laboratory course designed for students of pharmacy. Its object is to furnish the student with some accurate ideas of the physiological action of poisons, and also to acquaint him with methods of biological assay of drugs.

Associate Professor SHAKLEE.
Dr. DE LA PAZ.

14. *Pharmaceutical History, Jurisprudence, and Ethics.*—Two hours lecture; first semester (thirty-six hours).

This course of lectures discusses the origin and development of the pharmaceutical profession; the legal status of the profession; the relations of the profession with the profession of medicine, and with the people; its relations to the nostrum evil, to drug habituation, etc.

15. *Pharmacological Seminar.*—Conference; third year, first semester, 7.30 to 9.30 a. m., Saturdays.

A conference course in the study of the most important original papers on pharmacological subjects. Each student will be expected to follow and to report on a limited number of current journals, and to report to the class at stated intervals reviews of assigned articles for class discussion.

Associate Professor SHAKLEE.

16. *Pharmacological Research.*—A course in pharmaceutical research is open to those fitted to undertake the work and who have sufficient time to devote to it to make the work worth while. Research may be pursued in any pharmacological line, including the isolation of plant principles, physiological action of drugs, experimental therapeutics, toxicology, etc.

The hours will be arranged with the instructor.

Associate Professor SHAKLEE.

DEPARTMENT OF HYGIENE

VICTOR GEORGE HEISER, B. A., M. D., Professor of Hygiene, Chief of Department.
CARROLL FOX, M. D., Associate Professor of Hygiene.
SALVADOR VIVENCIO DEL ROSARIO, B. A., M. D., Instructor in Hygiene.
MIRIAM EDMONDS GRIFFIN, B. A., M. D., Instructor in Hygiene.

Because the subject of hygiene in its broadest sense is one of the most important which should concern the resident of the tropics, and more especially since the future prosperity of warm countries depends in a large measure upon the thoroughness with which the rules of hygiene are observed, this important subject will receive much fuller consideration than is accorded to it in the medical schools of temperate zones, the course of instruction extending through the fourth and fifth years.

Two courses will be given:

Hygiene 1. Lectures in hygiene and sanitation.—Three hours per week, extending through the second semester of the fourth year. This course comprises all of the subjects usually studied, especial attention being paid to the causes, methods of transmission and methods of combating the communicable diseases, especially cholera and other water-borne diseases; the disposal of sewage and refuse, the control of a city's water and milk supply, infant mortality, adulteration of foods and other subjects relative to the duties of health officers.

Text-book: Harrington, Practical Hygiene.

Professor HEISER.
Assistant Professor FOX.
Mr. DEL ROSARIO.

Hygiene 2.—A laboratory course of twelve hours during the first semester of the fifth year.

This course will enable the students to become familiar with the practical examination of water, air, milk, and food.

Text-book: Harrington, Practical Hygiene.

Mr. DEL ROSARIO.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY

VERNON LEE ANDREWS, M. D., Associate Professor of Pathology and Bacteriology, Chief of Department.
ROY WALLACE HAMMACK, B. A., M. D., Instructor in Pathology and Bacteriology.
JOSE HILARIO, M. D., Demonstrator in Pathology and Bacteriology.

The department of pathology and bacteriology occupies the lower floor of the east wing of the new Medical School building. This is divided into a large laboratory room for class work and three smaller rooms. Of these latter, one is a private room for the instructor, another a preparation room, and the third, larger than either of the others, is fitted up for a museum room. In addition to this there is a well-lighted, modern autopsy room and morgue. The morgue is a large room, containing 18 cooling boxes for bodies. In this room are installed the necessary machinery and apparatus for cooling the bodies by means of ammonia gas. Two of the boxes are arranged for the purpose of freezing bodies, while the others can be adjusted to any desired temperature. Each box is separate and distinct from the others. Three large pickling vats of the anatomical department are in the morgue room. As the school morgue is the official city morgue, the autopsies are varied and in the course of a year amount to between four and five hundred.

The courses in this department begin with the second semester of the second year and extend through the third year. The control of the official city morgue and of all the pathological and bacteriological work of the Philippines General Hospital insures sufficient material for a good working basis. The subjects are taught by laboratory work, demonstrations, recitations, and lectures. The following courses are given:

Pathology 1. The conduct of autopsies.—This course continues through the third year. Students are assigned to assist at post-mortem examinations, and are instructed in the methods of making such examinations and in recording the results in proper protocols.

Associate Professor ANDREWS.
Dr. HAMMACK.

Pathology 2. Bacteriology.—Second year, second semester.

Students become familiar with the principles of sterilization and disinfection, the preparation of culture media, and with the methods of cultivating, staining, and studying bacteria. The biological examination of air and water, and the more important species of pathogenic microörganisms are then considered, special emphasis being given to tuberculosis, cholera, and dysentery. The laws of infection, intoxication, and immunity are also considered. The hygienic, as well as the pathological relations of bacteriology, are kept in mind.

Text-book: Muir and Ritchie, Manual of Bacteriology.

Dr. **Hammack.**
Dr. **Hilario.**

Pathology 3. Immunity and Serum Therapy.—The last two weeks of the course in bacteriology are devoted to lectures on this subject.

Dr. **Ruediger.**

Pathology 4. General Pathology.—This course is given in the first semester of the third year. The subject is covered as far as possible by demonstrations and laboratory work. Topics that are not susceptible to this form of treatment are taken up in lectures and recitation and by text-books.

Text-book: Delafield and Prudden, Pathology.

Associate Professor **Andrews.**
Dr. **Hammack.**
Dr. **Hilario.**

Pathology 5. Special Pathology.—This course follows course 4, and continues through the second semester of the third year. In this course the student is given the gross pathology as well as the histology of the more common pathological lesions found in the tissues. Text-book: Delafield and Prudden, Pathology.

Associate Professor **Andrews.**
Dr. **Hammack.**
Dr. **Hilario.**

Pathology 6. Recitations.—Twice weekly throughout the year. This will cover the work gone over by the students in the laboratory as well as topics treated by lectures and those reserved for text-book study.

Associate Professor **Andrews.**
Dr. **Hammack.**

DEPARTMENT OF TROPICAL MEDICINE

RICHARD PEARSON STRONG, Ph. B., M. D., Professor of Tropical Medicine, Chief of Department.
ERNEST LINWOOD WALKER, B. A. S., S. B., S. D., Associate Professor of Medical Zoology.
LUIS GUERRERO, M. D., Associate Professor of Tropical Medicine.
——— ———, Assistant Professor of Tropical Medicine.
DAVID WILLETS, Ph. B., M. D., Assistant Professor of Tropical Medicine.
——— ———, Instructor and First Assistant Resident in Tropical Medicine.
CHARLES S. BANKS, M. S., Lecturer in Medical Entomology.

Tropical medicine is taught during the third, fourth, and fifth years. The courses throughout the third year will consist of laboratory work, lectures, and recitations. Particular attention will be paid to the subjects of medical zoölogy and medical entomology. The course in protozoölogy will be given under the direction of Doctor Walker and in helminthology under Doctor Willets. These courses will be largely practical. The courses in medical zoölogy will consist of laboratory studies and lectures on the medical relations of animals to man, animal parasites, animals as transmitters of disease. The student will be taught to diagnose systematically the various parasitic diseases from examinations of the fæces, sputum, blood, urine, of materials from various lesions of the skin, and of fluids obtained by aspiration.

Two special courses in medical zoölogy will be given:

1. A lecture and laboratory course which aims to give students training in the diseases of man caused by animal parasites, and such knowledge of the parasites themselves as will fit the student for the general practice of medicine. This course deals chiefly with the diagnosis, prophylaxis, and treatment of prevailing protozoal and verminous diseases, and is required of all regular students in the third year.

2. A practical course in medical entomology will also be given under the direction of Mr. Charles S. Banks. Attention will be paid to the character, habits, and classification of insects and arachnids, but particularly to their rôle in the transmission of diseases, and in the production of traumatisms and physiological disturbances. The course, which consists of lectures and laboratory work, will include the study of poisonous insects and arachnids, insects parasitic on man, domestic insects, sucking flies, mosquitoes, pseudoparasites, as well as mysiasis and prophylactic and remedial measures.

The course in clinical microscopy is in charge of Doctor Guerrero and will be given on alternate afternoons with that in medical zoölogy. In this course students will be taught the practical microscopic diagnosis of disease. Sufficient material for work is always available.

In the fourth and fifth years the time chiefly will be devoted by the individual student to the study and treatment of cases in the wards. The courses will be pursued particularly with a view of giving the student an intimate knowledge of the diagnosis and treatment of diseases prevailing in these islands.

Clinics will be held largely upon the various tropical fevers and other infectious diseases common to warm climates. In the clinical laboratory the student will be required to perform the special methods of investigation relative to the diagnosis and treatment of tropical infectious diseases which have been encountered in the wards. He will also have an opportunity to perform serum reactions, to prepare blood cultures, and to study the immunity obtained by the use of bacterial vaccines.

During the fifth year a course in dermatology will be given, relating particularly to such diseases as are more commonly encountered in tropical countries.

DEPARTMENT OF CLINICAL MEDICINE

WILLIAM EVERETT MUSGRAVE, M. D., Professor of Clinical Medicine and Therapeutics, Chief of Department.
ARISTON BAUTISTA Y LIN, Professor of Clinical Medicine and Therapeutics.
ANTONIO GUILLERMO SISON, B. A., M. A., M. D., Instructor in Clinical Medicine, First Assistant Resident in Clinical Medicine.
ALFONSO RAQUEL, M. D., Third Assistant Resident in Clinical Medicine.

Clinical medicine is taught during the third, fourth, and fifth years. With the large variety and abundance of clinical material now available didactic lectures are reduced to a minimum as a method of teaching in this department, and instruction is given by ward and dispensary talks, actual bedside work by the students, and conferences for discussion of the cases studied.

Particular attention is devoted to those etiologic and clinical manifestations of diseases which are peculiar to a tropical environment.

Instruction in clinical microscopy is given by Doctor Luis Guerrero.

During the entire third year the class will receive instruction in physical diagnosis by Doctors Antonio Sison, Perfecto Gutierrez and Adriano T. Cruz in the Free Dispensary. During the second semester of this year clinical diagnosis is taught. The course consists in practical demonstrations of the manner of preparing and preserving histories and other case records; of the use and the interpretation of the findings of all important instruments of precision and diagnosis used in medicine, and practical clinical diagnostic work with patients in the Free Dispensary and Hospital.

The entire course of instruction for fourth and fifth year students is conducted in the wards of the hospitals. On admission, selected cases are assigned to students who are required (under instructors) to obtain the histories, make the physical and necessary laboratory examinations, determine the diagnosis and outline the treatment.

Triweekly conferences are held at which the cases are reported in writing by the class and discussed by teachers and students.

The course in the diseases of the nervous system is given during the first semester of the fifth year by Dr. Newberne.

Therapeutics is taught during the second semester of the third year, and a course in applied therapeutics is given during the second semester of the fifth year by Dr. Bautista.

Clinics of especially interesting or unusual cases are given as material is available. Clinics on the exanthemata and acute infectious diseases in general are held at the Infectious Disease Hospital. Students are required to attend autopsies on cases of patients dying in the wards, and they are also expected to attend the Medical Society meetings.

PEDIATRICS

JOSE ALBERT, M. D., Professor of Pediatrics.
LEONCIO LOPEZ, M. D., First Assistant Resident in Pediatrics.

The subject of pediatrics will be taken up during the fourth year. Instruction will be as follows:

1. Conferences on anatomy, physiology, hygiene, feeding, and symptomology.
2. Practical work in the ward and dispensary consisting of clinical examination, history writing, diagnosis, therapy and preparations of infant feeding. Students are required to attend autopsies on cases of patients dying in the wards. Clinics on the exanthemata and infectious diseases are held in the Infectious Disease Hospital.
3. Especial attention will be devoted to the causes of infant mortality in the Philippines, and to the study of certain diseases of infants, viz; beriberi, disorders of nutrition, gastro-enteritis, broncho-pneumonia, meningitis, paralysis, etc.

DEPARTMENT OF SURGERY

JOHN RICH McDILL, M. D.,[1] Professor of Surgery, Chief of Department.
PHILIP KINGSNORTH GILMAN, B. A., M. D., Associate Professor of Surgery.
HANS SCHIFFBAUER, M. D., Assistant Professor of Surgery, and Resident Surgeon.
POTENCIANO GUAZON, M. D., Instructor and Second Assistant Resident in Surgery.
JOSE EDUQUE, M. D., Instructor and Third Assistant Resident in Surgery.

The teaching of surgery is done in the clinic rooms of the hospital and in the hospital wards, in the out-patient department, and in the clinical laboratories of the school. Instruction in surgery is begun with the second semester of the third year, which gives the students of this school continuous teaching on surgical subjects for two and one-half years. The division of the work is as follows:

Work of the third-year students.—During the second semester about one hundred and thirty hours are devoted to questions and demonstrations on the history of surgery, surgical physiology and the processes of repair, surgical pathology, surgical anatomy, infection and immunity, surgical technique, anæsthesia and anæsthetics, history writing, and surgical dressings.

Work of the fourth-year class.—During the first semester about one hundred and thirty hours are devoted to conferences and demonstrations in surgical pathology, tumors, the therapy of surgery, history taking, bandaging, drainage, dressings, ligature, and minor surgery. During the second semester morning visits are made twice a week to the wards for bedside instruction, and courses in gynecologic diagnosis and medical gynecology, experimental and operative-surgery, major gynecology, and genito-urinary surgery are given. Attendance on the clinic for general surgery is also required of this class.

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[1] Resigned.

Work of the fifth-year class.—Throughout the year daily morning ward visits are made for bedside instruction, while history taking of all clinical cases is obligatory. The student reads and discusses these histories with the teacher when the case comes to operation. All necessary physical and laboratory examinations are made by the students for each case. Experimental and operative surgery is given one morning in the week. The course in surgery of the nervous system is given once a week, including ward visits, a clinic or lecture, and opportunity for assisting at neurologic operations. Lectures on differential diagnosis and the general surgical clinic are given twice weekly for general surgery, major gynecology, and genito-urinary surgery. Special attention is given to fractures and dislocations, and to orthopedics.

General, surgical, and above all living pathology and surgical physiology, is the basis of all teaching in this department.

The students have ample opportunity to develop surgical technique in actual operations before graduation.

A course of operative surgery on animals has been given once a week from 8 a. m. to 12 m., throughout the year for the graduating class. In this course the students are taught to prepare personally two days previously all materials to be used for the operation. This work includes arranging the sponges, towels, sheets, gowns, etc., in proper packages and sterilizing them. Careful histories of the cases assigned for operation are prepared by the student acting as the "family physician," these are discussed by the student acting as "surgeon," and the operation is carried out with the assistance of the remainder of the section serving as first, second, and third assistant, and anæsthetizer. At the next operation the "family physician" assumes the duties of the "surgeon," and so on in rotation. The students are required personally to carry out the after-treatment of the cases, making full notes on history sheets of pulse, temperature, respiration, etc., and to present the animal at the next clinic. If death follows the operation, a post-mortem examination and report as to the cause of death is required, and the findings are made a part of the case record.

DEPARTMENT OF EYE, EAR, NOSE, AND THROAT

REINHARD REMBE, M. D., Associate Professor of Ophthalmology, Otology, Rhinology, and Laryngology, Chief of Department.
ARISTON UBALDO, M. D., Resident in Ophthalmology.

The free clinic affords abundant material for class instruction in this department. Students will be required to attend a prescribed course of lectures, and become thoroughly familiar with the apparatus used in examinations.

During the fifth year, a course of lectures and demonstrations is given on diseases of the eye, ear, nose, and throat, three times a week, of two hours each. The first half of the semester is exclusively devoted to ophthalmology.

From clinical material of more than one hundred patients a day there is an unequaled opportunity to select cases for the lectures and demonstrations. The students thus become thoroughly familiar with the diseases in all their phases.

Courses in ophthalmoscopy are of such scope and thoroughness as to enable the student to diagnose the ordinary intraocular morbid conditions. Particular stress is laid upon the correction of errors of refraction and the exact manipulation of the different scientific instruments for that purpose.

Near the end of the first half of the semester a number of afternoons are devoted to comparative ophthalmoscopy. The semester closes with an operative course on the cadaver and phantom.

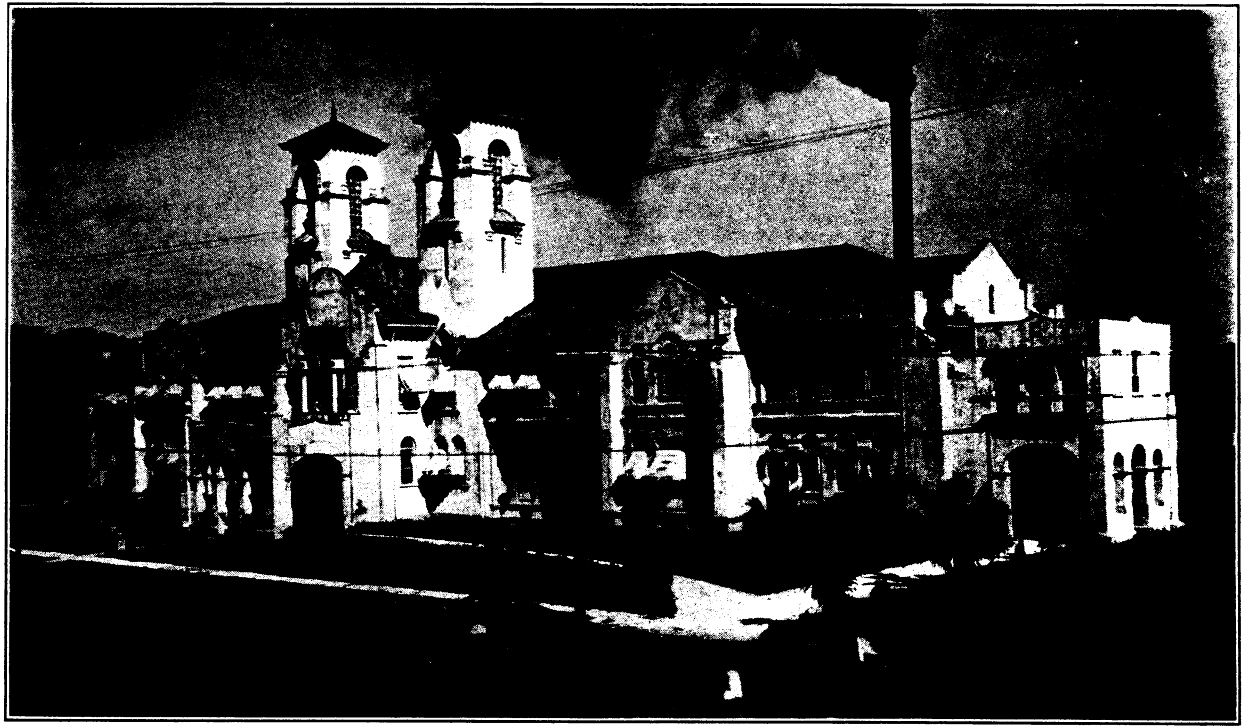
The second half of the semester is devoted to diseases of the ear, nose, and throat. Students are assigned an active part so far as possible, in all surgical operations. They are instructed in methods of anesthesia and also act as assistants.

The exigencies of the Philippine Islands require of the prospective physician more than the usual knowledge in this specialty, hence no time or labor is spared to accomplish the desired ends.

DEPARTMENT OF OBSTETRICS

FERNANDO CALDERON, B. A., M. D., Professor of Obstetrics, Chief of Department.
BALDOMERO ROXAS, M. D., Associate Professor of Obstetrics.
HONORIA ACOSTA SISON, M. D., First Assistant Resident in Obstetrics.

During the first semester of the fourth year the students are given a course of lectures and recitations upon the anatomy and physiology of the mother and fœtus, and the mechanism of labor in its various presentations and positions; these lectures are illustrated with specimens, and models, and by the use of the reflectoscope. A course of manikin work accompanies these lectures and special attention is devoted to the examination of pregnant women.



BUREAU OF SCIENCE

During the fourth and fifth years the students are called upon to assist in the obstetrical ward and in the out-patient department. Two students are assigned to be present every twenty-four hours in the General Hospital, waiting for delivery calls. There is also a further course of lectures and recitations upon the pathology of pregnancy and labor, with demonstrations.

FIRST YEAR.

First semester.	Hour.	Second semester.	Hour.
Anatomy:		Anatomy:	
Monday, Tuesday, Wednesday	7.30-11.30	Monday, Wednesday	7.30-11.30
Thursday, Friday, Saturday	7.30-10.30	Tuesday	9.00-11.30
Histology:		Chemistry:	
Thursday, Friday, Saturday	10.30-11.30	Tuesday	7.30-9.30
Thursday, Friday	1.00-4.00	Thursday, Friday, Saturday	7.30-10.30
Zoölogy 3:		Embryology:	
Monday, Tuesday, Wednesday	1.00-4.00	Thursday, Friday, Saturday	10.30-11.30
		Thursday, Friday	1.00-4.00
		Zoölogy 4:	
		Monday, Tuesday, Wednesday	1.00-4.00

SECOND YEAR.

Anatomy:		Physiology:	
Monday, Tuesday, Wednesday, Thursday, Friday, Saturday	7.30-11.30	Monday, Tuesday, Wednesday, Thursday, Friday, Saturday	7.30-11.30
Chemistry:		Bacteriology:	
Monday, Tuesday, Wednesday, Thursday, Friday	1.00-4.00	Monday, Tuesday, Wednesday, Thursday, Friday	1.00-4.00

THIRD YEAR.

Pharmacology:		Physical Diagnosis:	
Monday, Tuesday, Wednesday	7.30-11.30	Monday, Wednesday	7.30-9.30
Thursday, Friday, Saturday	7.30-10.30	Friday	8.30-10.30
Physical Diagnosis:		Clinical Diagnosis:	
Thursday, Friday, Saturday	10.30-11.30	Monday, Wednesday	9.30-10.30
Pathology:		Friday	7.30-8.30
Monday, Tuesday, Wednesday, Thursday, Friday	1.00-4.00	Surgery:	
		Tuesday, Thursday, Saturday	7.30-9.30
		History of Medicine:	
		Monday	10.30-11.30
		Surgical Pathology:	
		Wednesday, Friday	10.30-11.30
		Pathology:	
		Tuesday, Thursday, Saturday	10.30-11.30
		Monday, Friday	1.00-4.00
		Clinical Microscopy:	
		Tuesday, Thursday	1.00-4.00
		Protozoölogy:	
		Wednesday	1.00-4.00

FOURTH YEAR.

First semester.	Hour.	Second semester.	Hour.
Obstetrics:		Hygiene:	
Monday, Wednesday, Friday	7.30- 8.30	Monday, Wednesday, Friday	7.30- 8.30
Clinical Medicine:		Clinical Medicine:	
Tuesday, Thursday, Saturday	7.30- 8.30	Tuesday, Thursday, Saturday	7.30- 8.30
Pediatrics:		Tuesday, Thursday, Saturday	9.30-10.30
Tuesday, Thursday, Saturday	8.30-10.30	Pediatrics:	
Surgery:		Tuesday, Thursday, Saturday	8.30- 9.30
Monday, Wednesday, Friday	8.30-11.30	Tropical Medicine:	
Tropical Medicine:		Tuesday, Thursday, Saturday	10.30-11.30
Tuesday, Thursday, Saturday	10.30-11.30	Surgery:	
Medical Zoölogy:		Monday, Wednesday, Friday	8.30-11.30
Monday, Wednesday, Friday	1.00- 4.00	Obstetrics:	
Medical Entomology:		Monday, Wednesday, Friday	3.00- 4.00
Tuesday, Thursday	1.00- 2.00	Surgery:	
Clinical Microscopy:		Tuesday, Thursday, Saturday	3.00- 4.00
Tuesday, Thursday	2.00- 4.00		

FIFTH YEAR.

Surgery:			
Monday, Wednesday	7.30-11.30		
Friday	10.30-11.30		
Experimental Surgery:			
Friday	8.30-10.30		
Clinical Medicine:			
Tuesday, Thursday, Saturday	7.30- 8.30		
Tuesday, Thursday, Saturday	9.30-10.30	Rotation Intern Service.	
Neurology:		Mental Diseases:	
Tuesday, Thursday, Saturday	8.30- 9.30	Saturday	8.30-9.30
Tropical Medicine:		Medical Jurisprudence:	
Tuesday, Thursday, Saturday	10.30-11.30	Friday	7.30-8.30
Medical Jurisprudence:			
Thursday	1.00- 2.00		
Eye, Ear, Nose, Throat:			
Monday, Wednesday, Friday	1.00- 3.00		
Obstetrics:			
Monday, Wednesday, Friday	3.00- 4.00		
Hygiene:			
Tuesday, Thursday	2.00- 3.00		

Students, College of Medicine and Surgery, 1911–12

FIRST YEAR CLASS (8)

(Admitted June 5, 1911.)

Lantin, Pedro T.
Magcawas, Paz.
Ochoa, Santiago.
Panis, Emiliano P.
Philbrook, J. W.
Sales, Matias N.
Tirona, Joaquina E.
Zarco, Pablo V.

SECOND YEAR CLASS (17)

Aromin, Casto.
Baltazar, Miguela.
Bulatao, Emilio.
Calupitan, Manuel.
Cariño, José M.
Farrales, Gregorio.
Francisco, Remigia.
Garcia, Faustino.
Guanio, Valentin.
Henares, Pedro.
Jugo, Isabel.
Morales, Arsenio B.
Nañagas, Juan C.
Ochoa, Enrique F.
Padua, Regino.
Ramos, José.
Ylagan, Mariano L.

THIRD YEAR CLASS (14)

Arguelles, Manuel.
Arvizu, Teodoro C.
Bolaños, Emilio Z.
Booth, James L.
Bringas, Elisio.
Concha, Amparo.
Dycacio, Julian.
Fernando, Juan.
Gonzales, Virgilio R.
Villacorta, José S.
Luna, Juan L.
Luna, Severina.
Orosa, Sixto.
Peralta, Bernardo.

FOURTH YEAR CLASS (8)

Domingo, Elias.
Elizalde, Primitivo.
Eustaquio, Isaac.
Feliciano, Hilarion T.
Lijano, Artemio.
Luna, Victoriano.
Valerio, Teodorico.
Velarde, Herminio.

FIFTH YEAR CLASS (9)

Almeda, Felipe.
Baltazar, Martin.
Concepcion, Isabelo.
Manalang, José P.
Mendoza, Maria Paz.
Montemayor, Gonzalo.
Ramirez, Manuel.
Santos, Rafael M.
Valencia, Pio.

GRADUATES, FEBRUARY 27, 1909 (8)

José Eduque.
Isabelo Katigbak.
Leoncio Lopéz.
Vicente E. Manapat.
Ramon Ongsiaco.
Lorenzo Ordoñez.
Pacifico Panlilio.
Vicente Rivera.

GRADUATES, MARCH 5, 1910 (12)

Joaquin Banzon.
Melicio Castro.
José Elchico.
José Garcia.
Ricardo Leynés.
Rosendo R. Llamas.
Miguel Lukban.
Cayo Marfori.
Alfonso Raquel.
Ruperto Roque.
Victor Sevilla.
Augusto Villalon.

GRADUATES, MARCH 29, 1911 (3)

Alverez, José
Borromeo, Maximo
Hilario, José

TEXT-BOOKS RECOMMENDED

PATHOLOGY AND BACTERIOLOGY:

Delafield and Prudden. A Handbook of Pathological Anatomy and Histology. New York: William Wood & Co. ₱10.

Jordan, Edward B. General Bacteriology. ₱6.

Muir, Robert, and Ritchie, James. Manual of Bacteriology. American edition, from last English edition. New York: The Macmillan Company. ₱8.

SURGERY:

Da Costa, John Chalmers. Modern Surgery, General and Operative. New York. ₱10.

Binnie, J. F. Manual of Operative Surgery. Philadelphia: P. Blakiston's Son & Co. ₱6.

White, J. William, and Martin, Edward. Genito-Urinary Surgery. Philadelphia and London: J. B. Lippincott Company. ₱12.

Treves, Frederick. Applied Anatomy.

Hirst, Barton Cooke. Text-Book of the Diseases of Woman. New York: W. B. Saunders Company. ₱12.

Sutton, J. Bland. Tumors Innocent and Malignant; Their clinical character and appropriate treatment. Chicago: W. T. Keener & Co.

Ashton, W. E. Practice of Gynecology: W. B. Saunders & Co.

PHARMACOLOGY:

Cushny, Arthur R. Pharmacology and Therapeutics. Philadelphia and New York: Lea Bros. & Co. ₱7.50.

Sollman, Torald. A Text-book of Pharmacology. Second edition. New York: W. B. Saunders Company. ₱8.

CHEMISTRY:

Newth, G. S. Text-Book of Inorganic Chemistry. London: Longmans, Green & Co. ₱3.25.

Smith, Alexander. Introduction to General Inorganic Chemistry. New York: The Century Company. ₱4.50

Smith, Alexander. Laboratory Outline of General Chemistry. Chicago: University of Chicago Press. ₱1.50.

Remsen, Ira. Organic Chemistry. Boston: D. C. Heath & Co. ₱2.40.

Perkin, W. H., and Kipping, F. Stanley. Organic Chemistry. New and revised edition, 1903. Philadelphia and London: J. B. Lippincott Company. ₱4.

TROPICAL MEDICINE:

Manson, Patrick. Tropical Diseases. Edition, 1907. London: Cassel. ₱6.

CLINICAL MEDICINE:

Osler, William. Principles and Practice of Medicine. New York: D. Appleton & Co. ₱10.

Schamberg, J. F. Diseases of the Skin and the Eruptive Fevers. W. B. Saunder Company. ₱3.

Friedenwald, Julius, and Rurah, John. Diet in Health and Disease. W. B. Saunders Company. ₱10.

McKenzie, R. Tait. Exercise in Education and Medicine. W. B. Saunders Company. ₱7.50.

Church, Archibald, and Peterson, Frederick. Nervous and Mental Diseases. W. B. Saunders Company. ₱13.

Kinnicutt, Francis P., and Potter, Nath'l B. Sahli's Diagnostic Methods. W. B. Saunders Company. ₱12.

CLINICAL MEDICINE—continued.

Kemp, Robert C. Diseases of the Stomach and Intestine.

Dieffenbach, William H. Hydrotheraphy. Rebman Company. ₱6.

Cabot, Richard C. Physical Diagnosis. Wm. Wood & Co. ₱8.

OBSTETRICS:

Williams, J. W. Text-Book of Obstetrics. Last edition. New York: D. Appleton & Co. ₱12.

Demelin. Obstétrique d'urgence, 1909. Avec fig. ₱1.40.

Farabeuf et Varnier. Introduction à l'étude clinique et à la pratique des accouchements. Préface du prof. Pinard. Ed 2. 1904. ₱5.40.

Varnier. La pratique des accouchements obstétriques journalière avec 387 fig. 1900. ₱9.20.

PEDIATRICS:

Holt, L. Emmett. Diseases of Infancy and Childhood. New York: D. Appleton & Co. ₱10.

Pfaundler und Schlossmann. Handbuch der Kinderkrankheiten. 2 Bde. Leipzig: Vogel. 60 Marks.

Cautley, Edmund. Diseases of Infants and Children. 1910. London: Shaw & Sons. ₱14.

Thomson, John. Guide to the clinical examination of sick children. Last edition. London: W. Green & Sons. ₱8.50.

Langstein, Leo, und Meyer, Ludwig F. Säuglingsernährung und Säuglingsstoffwechsel. Wiesbaden 1910. J. F. Bergmann. 6.60 Marks.

PHYSIOLOGY:

Tigerstedt, R. Physiology. Translation.

Kirke, S. Hand-Book of Physiology. American revision.

Howell, W. H. Text-Book of Physiology. 2d edition. 1908. W. B. Saunders Company.

Brodie, T. G. Essentials of Experimental Physiology. Longmans, Green & Co.; New York.

Halliburton, W. D. Essentials of Chemical Physiology. Longmans, Green & Co.

Hawk, P. B. Physiological chemistry. P. Blakiston's Son & Co.

THERAPEUTICS:

Stephens. Materia medica and therapeutics. New York: W. B. Saunders Company.

TOXICOLOGY:

Reese, J. J. Medical jurisprudence and toxicology. P. Blakiston's Son & Co.

Autenrieth, W. Detection of Poisons. P. Blakiston's Son & Co.

THE UNIVERSITY OF THE PHILIPPINES

THE COLLEGE OF AGRICULTURE

THIRD ANNUAL ANNOUNCEMENT AND CATALOGUE

Faculty of the College of Agriculture

MURRAY BARTLETT,
President of the University.

EDWIN BINGHAM COPELAND, Ph. D.,
Professor of Economic Botany,
Dean and Superintendent of the College of Agriculture.

GEORGE PATRICK AHERN, LL. B.,
Professor of Forestry.

HUGH MACALLUM CURRAN, B. S.,
Associate Professor of Forest Management.

HORACE GROVE DEMING, Ph. D.,
Associate Professor of Chemistry.

ALBERT G. GLODT, C. E., M. E.,
Associate Professor of Agricultural Engineering.

HARRY NICHOLS WHITFORD, Ph. D.,
Associate Professor of Forest Botany.

HAROLD CUZNER, B. S.,
Farm Superintendent.

FREDERICK WILLIAM FOXWORTHY, Ph. D.,
Assistant Professor of Dendrology.

EDGAR MADISON LEDYARD,
Assistant Professor of Entomology.

DONALD MAXWELL MATTHEWS, M. S. F.,
Assistant Professor of Forestry.

MARIANO MANAS CRUZ, B. S. A.,
Instructor in Agronomy.

ARTEMAS LAWRENCE DAY, B. A.,
Instructor in English.

SAMUEL BERT DURHAM, B. S.,
Instructor in Animal Husbandry.

RICHARD MORRIS HOLMAN, B. A.,
Instructor in Botany.

MAURICIO JULIAN OTEYZA, M. F.,
Instructor in Silviculture.

CARRIE STEIN LEDYARD,
Instructor in Modern Languages.

EDWIN EMIL SCHNEIDER, B. S.,
Instructor in Wood Technology.

INOCENCIO ELAYDA, B. S. A.,
Assistant in Mathematics.

MANUEL ROXAS, B. A., B. S. A.,
Assistant in Chemistry.

THE COLLEGE OF AGRICULTURE

HISTORY

The College of Agriculture was the first college to be organized as a part of the University, beginning its class work on June 14, 1909. Classes met at first in the houses of the faculty, then in tents loaned by the Bureau of Education. This condition lasted until October 4 of that year, when the completion of a building of mixed materials made it possible for classes to meet on the college farm. The enrollment during the first year was 56.

The first permanent buildings of the college were finished in January, 1911. These are:

(1) An administration and academic building, containing the office of the dean, five class rooms, two library rooms, and a large reading room.

(2) A laboratory building, housing the departments of botany and chemistry.

(3) A stable and bodega.

(4) A silk-culture house.

(5) A plant-propagation house.

These buildings are all constructed of reinforced concrete. The structure which at first housed the entire institution is now devoted to shops and to the department of agronomy.

The attendance at the college during its second year was 95. It is now, in the third year, 175.

GENERAL INFORMATION

Los Baños can be reached from Manila by boat or by rail. There are three trains daily, each way.

Site.—The college occupies a tract of some 72 hectares of land, situated at the foot of Mount Maquiling and about 3 kilometers east of the village of Los Baños. The land is diversified, and permits the cultivation of every important crop of the Philippines. The preliminary work necessary to use the mountain stream crossing the farm for an irrigation system and electric plant has been done. An excellent macadamized road leads from Los Baños to the college.

Life of students.—A large majority of the students live in clubhouses, most of which are located on the campus, where they form a barrio. The college furnishes, without rent, land for the houses and gardens, and oversees the sanitation and neatness of the barrio. The clubs own their houses, and in part have built them. The average cost has been about ₱25 a student. The cost of living in these clubs varies from less than ₱10 a month to ₱20. The Bureau of Forestry houses its scholars.

Student activities.—The students have organized themselves into a student body, with its several committees on athletics, finance, social affairs, domestic improvement, and publication. They publish a monthly magazine, devoted to the promotion of the agricultural and forest interests of the Islands. Students' athletics have taken the direction of baseball, tennis, and track work. There are the usual literary and musical organizations. Various places of agricultural or other interest near Los Baños are visited by the students. The classes in animal husbandry visit the Alabang stock farm. The classes in botany make an annual trip to the summit of Mount Banajao. Several students have delivered lectures during the year before different bodies with agricultural interests.

Aid to students.—During the year 1911–12 twenty-five "pensionados" have been sent to the college by the Bureau of Education; a part of these may be reappointed. They are recommended by the division superintendents of the several provinces, the number from each being determined by the Director of Education. They are under contract to serve as teachers when they leave the college for the same length of time that they held the pension, or scholarship. There are also in the college a few "municipal pensionados," sent under a similar contract. The Bureau of Forestry has paid a pension of ₱20 a month to the seventeen students first appointed to its course, and ₱25 a month to the twenty-seven students in the second class. Upon completion of the course in forestry, they will enter the service as rangers, to which positions they will be admitted without examination.

A few of the more advanced students are employed as student assistants, receiving a maximum salary of ₱25 a month. The superintendent is authorized to employ as many students as he may need, at 10 centavos an hour; at this rate, reasonably bright and energetic students can pay their necessary living expenses and keep up the required work of the college. There will be an opportunity during the coming year for at least fifty students to earn their living in this way.

Library.—The library occupies two rooms in the academic building. It contains standard works of reference, standard works on agriculture and kindred sciences, and a fairly complete collection of publications on tropical agriculture. It is open from 7 a. m. to 9 p. m. The reading room seats more than one hundred.

The equipment of the college is described under the several departments.

Fees.—Tuition in the college is free, and there are no matriculation or graduation fees. A deposit of ₱15 must be made at the beginning of each year by each student except those in the first two years of the six-year course. This is to cover destruction of property, and the balance remaining after paying for property lost or destroyed is returned at the end of the year. In all laboratory and field work the students are responsible for all college property given into their care.

ADMISSION AND GRADUATION

The College of Agriculture offers four undergraduate courses:

(1) A six-year course in agriculture, based on the completion of the intermediate course in the public schools, and leading to the degree of Bachelor of Agriculture.

(2) A four-year course in agriculture, based on the completion of the high-school course of the public schools, and leading to the degree of Bachelor of Science in Agriculture.

(3) A four-year course in forestry, based on the completion of the intermediate course of the public schools; graduates of this course receive a diploma.

(4) A four-year course in forestry for high-school graduates, leading to the degree of Bachelor of Science in Forestry. Candidates for this degree can substitute two years' service as rangers for one of the years in residence.

Students trained elsewhere than in the public schools can be admitted:

(*a*) By certificate.

(*b*) By examination covering the subjects for which credit is claimed, whether for admission or advanced standing.

Candidates for advanced standing in any course will be given credit for such subjects as they satisfy the faculty, by certificate or by examination, that they have completed elsewhere, though the college will not graduate any student who has not spent at least one school year in residence. No instruction given elsewhere in the Philippine Islands is likely to prepare a student to complete either course in agriculture in less than three years, or in forestry in less than two years.

Students entering with advanced standing beyond the beginning of the second year of the six-year course will necessarily be behind their classes in Botany 2. This will hamper their work in agronomy, and is likely to cause conflicts in class hours which will keep their work irregular. To meet this condition, the college will give Botany 2, during the summer vacation, for students who desire to devote their entire time to it during nine weeks. Students expecting to enter any course with advanced standing beyond the point mentioned are strongly urged to present themselves at the beginning of the summer vacation, and make up their work in this subject before the regular college year opens.

THE SIX-YEAR COURSE IN AGRICULTURE

FIRST YEAR	THIRD YEAR	FIFTH YEAR
English I.	Chemistry I.	Elective.
Mathematics I.	Mathematics III.	Physics.
German I.	Zoölogy.	Animal Husbandry I.
Botany I.	Agronomy I.	Agronomy III.

SECOND YEAR	FOURTH YEAR	SIXTH YEAR
English II.	Chemistry II.	Elective.
Mathematics II.	Rural Engineering.	Elective.
German II.	Entomology.	Agronomy IV or V.
Botany II.	Agronomy II.	

Any course given in the college, and not required, may be presented as an elective. Besides the courses described in the following pages, two years of Spanish may be elected. At least one elective must be chosen from chemistry, rural engineering, or animal husbandry.

Each candidate for graduation must present a thesis, representing a year's work in one subject, and counting as one elective credit; at least one regular elective must be chosen in the department in which the thesis is prepared.

DEPARTMENTS OF INSTRUCTION

DEPARTMENT OF ENGLISH

ARTEMAS LAWRENCE DAY, Instructor in English.

English I.—It is intended in this course to give the student a very ready use of both written and spoken English. To this end most of the time is taken up with theme writing. Maxwell, Writing in English, is used as a text.

[First year. Mr. DAY.

English II.—The work of this course consists of both theme writing and the study of standard literature. Lamb's Tales of Shakespeare, Hawthorne's Biographical Stories, and Maxwell, Writing in English, are used as texts. A part, however, of the matter to be read is taken from such sources as the Philippine Agricultural Review and the United States Yearbook of Agriculture, and the themes written are chiefly on subjects of agricultural interest.

[Second year. Mr. DAY.

English III.—The object of this course, as of the preceding, is improvement in the spoken and written use of the language. Preparation of themes, essays, arguments and debates. The subjects will be matters of interest in agriculture, forestry and industrial economics. Prerequisite, English I and II and at least two other credits in language.

[Elective. Mr. DAY.

DEPARTMENT OF MODERN LANGUAGES

CARRIE STEIN LEDYARD, Instructor in Modern Languages.

German I.—The aims of this course are to make the pupils familiar with the essentials of German grammar and to enable them to read moderately difficult German with readiness. A considerable amount of composition and conversation in German is introduced.

Text-books: Joynes-Meissner, German Grammar (Part I); Wenkebach, Glück Auf.

[First year. Mrs. LEDYARD.

German II.—The object of this course is to prepare the student for the reading of scientific texts, to enable him to translate intelligently and with ease any scientific work which he may wish to read in preparation for or execution of his profession. Text-books: Joynes-Meissner, Grammar; Wenkebach, Glück Auf; Dippold, Scientific German Reader, with scientific selections from practical zoölogical, botanical, and agricultural books. Lessons in composition and conversation are continued.

[Second year. Mrs. LEDYARD.

French I.—If sufficient students apply for it, a course in elementary French will be given during the coming year. It is expected that students taking one year of French will follow it with a second year.

[Elective. Mrs. LEDYARD.

DEPARTMENT OF MATHEMATICS

INOCENCIO ELAYDA, Assistant in Mathematics.
MANUEL ROXAS, Assistant in Chemistry.

Mathematics I and II Elementary Algebra and Geometry.—This course is identical with the same work in the first two years of the high school; algebra and half of plane geometry are covered.

[First and second years. Mr. ELAYDA.

Mathematics III. Plane Geometry and Trigonometry.—The first half of the course completes plane geometry. The second half comprises plane trigonometry and elementary surveying. The students are required to become familiar with the use of the compass, tape, transit, and level, and able to measure and plat a field, or determine contours for the purpose of running drainage or irrigation ditches.

[Third year. Mr. ROXAS.

DEPARTMENT OF RURAL ENGINEERING

HAROLD CUZNER, Farm Superintendent.
SAMUEL B. DURHAM, Instructor in Animal Husbandry.

Rural Engineering I.—The first half year is devoted to irrigation and drainage, with attention to the measurement, control, and duty of water, and the demands of different soils and crops. The second semester is occupied with the study of buildings and machinery. Attention is given to sanitation throughout the course. Fourth year.

[First semester, Mr. CUZNER; second semester, Mr. DURHAM.

An elective, more advanced course will be given in surveying, irrigation, or machinery, whenever there is sufficient demand for it.

DEPARTMENT OF CHEMISTRY

HORACE GROVE DEMING, Associate Professor of Chemistry.
MANUEL ROXAS, Assistant in Chemistry.

The department of chemistry occupies the east end of the laboratory building. There are accommodations for eighty students in the elementary courses and desks for several workers in agricultural investigation. The stock room is supplied with apparatus for the course in general chemistry and contains such special pieces as a spectroscope, polarimeter, a large still for water, hydraulic and filter presses, shaking and stirring apparatus for agricultural analysis, an autoclave for starch hydrolysis, a calorimeter, a Geryk pump for high vacuum work, and on octuple Kjedahl apparatus for proteid determinations in feeding experiments.

The installation of a gas generator and of an electrical generator for lighting and electro-chemical work is expected before the opening of the year.

While Chemistry I is announced for the third year it will in practice be given during the second and third years in combination with Botany II.

[Third year. Associate Professor DEMING, Mr. ROXAS.

Chemistry I.—Oxygen and its compounds; hydrogen; the laws of gases; the atomic theory; determination of molecular weight; use and meaning of chemical formulas and equations; the solution of different types of problems involving weight and volume reactions; the reactions of the halogens; types of chemical reactions and the relation of acids, bases, and salts to each other; the compounds of sulphur and nitrogen and phosphorus, and the relation of these elements to the food supply of plants and animals. The types of carbon compounds found in plants, with a few simple experiments on their properties and identification. The student is made familiar with simple quantitative determinations.

[Third year. Dr. DEMING, Mr. ROXAS.

Chemistry II.—This course is first a review and extension of the principles of qualitative analyses, followed by a course in the identification of the commoner acid radicals, and quantitative determinations of chlorine, sulphur, and phosphorus. Volumetric analyses and elementary exercises in the analysis of agricultural products complete the course.

[Fourth year. Dr. DEMING, Mr. ROXAS.

Chemistry III.—Combined lectures and quizzes on the principles of agricultural chemistry, and laboratory exercises, including the complete analysis of minerals, soils, and fertilizers. Prerequisite, Chemistry II.

[Fourth year. Dr. DEMING, Mr. ROXAS.

Chemistry IV. Theoretical Organic Chemistry.—This course will be given only when a number of students of sufficient preparation present themselves for enrollment.

[Elective. Dr. DEMING.

PHYSICS

A course in elementary physics is given this year by Dr. Deming.

DEPARTMENT OF ENTOMOLOGY

EDGAR MADISON LEDYARD, Assistant Professor of Entomology.
FREDERICK WILLIAM FOXWORTHY, Assistant Professor of Dendrology.

The department of entomology occupies a commodious laboratory, fairly equipped for its work. It has a model breeding house and complete facilities for sericiculture. It possesses a collection of more than 20,000 insect specimens, including the pests of many countries.

General Zoölogy.—An elementary course on structure, classification, and life histories, covering in outline the entire animal kingdom. The laboratory work involves the regular use of the compound microscope. Each student is required to keep a notebook, and correct observation and correct drawing are essential parts of the work. Linville and Kelly's General Text-Book of Zoölogy will be followed more nearly than any other text.

[Third year. Assistant Professor LEDYARD, Dr. FOXWORTHY.

Economic Entomology.—The first semester is devoted to the study of insect anatomy, development, and classification. Each student is expected to familiarize himself with the leading groups in the collection of the college and to add to the museum a number of insects taken, preserved, and labeled by himself. In the second semester especial attention is paid to the insect enemies of farm, garden, and forest products, or domestic animals, and of the household. Methods of control are emphasized, and the students are given practice in the preparation and use of insecticides, and instructed in the various methods of controlling pests. Special work in sericiculture is also given.

[Fourth year. Assistant Professor LEDYARD, Dr. FOXWORTHY.

DEPARTMENT OF ANIMAL HUSBANDRY

SAMUEL B. DURHAM, Instructor in Animal Husbandry.

This department has a bodega and small stable, and a piggery, and expects to build during the current year another stable of twice the capacity. It has four model hen houses, and will build others as they are needed. The area devoted to forage and pasture is about 10 hectares. It has work cattle, goats, hogs, and chickens. A herd of Amrat Mahal cattle, selected by the head of the English veterinary service in Madras, and a Welsh stallion from Australia have been ordered.

Animal Husbandry I. Elements of Animal Husbandry.—The origin, development, adaptability, and characterics of the leading breeds of farm stock and poultry; score-card work; the principles of breeding; problems confronting the breeder. Lectures cover feeds and feeding, and infections and contagious diseases in the Philippines.

Text-Books: Plumb, Types and Breeds of Farm Animals; Davenport, Principles of Breeding (Parts I–III); Watson, Farm Poultry.

[First year. Mr. HOLMAN.

Animal Husbandry IIa. Diseases.—A more thorough study, following the lectures in Animal Husbandry I; care and management; common remedies; "unsoundness;" diseases of the foot, and shoeing.

Text-book: Mayo, Diseases of Farm Animals.

[First semester.

Animal Husbandry IIb. Feeds and Feeding.—The elements of animal food and their uses; assimilation; composition of feeds, and compounding of rations.

Text-book: Henry, Feeds and Feeding.

[Second semester; elective. Mr. DURHAM.

DEPARTMENT OF BOTANY

EDWIN BINGHAM COPELAND, Professor of Economic Botany.
HAROLD CUZNER, Farm Superintendent.
FREDERICK WILLIAM FOXWORTHY, Assistant Professor of Dendrology.
RICHARD MORRIS HOLMAN, Instructor in Botany.

The department of botany has for class work a laboratory seating seventy students, and the use, with the department of agronomy, of another room for physiological experimentation. It has thirty-six compound microscopes and the other usual equipment for morphological and elementary botanical work; a cathetometer, clinostat, auxanometers, transpiration machines, and all other ordinary physiological apparatus; solid concrete tables for precision work; a large collection of fungi; and a mounted herbarium of about 4,000 sheets.

More valuable for botanical work than the indoor equipment is the environment of the college. From the lake to the mossy forest on the summit of Maquiling, every great tropical formation except the mangrove and the Alpine scrub is present within convenient reach. Aside from the large number of introduced plants on the campus, there is an extrordinarily large local flora; and this vegetation never rests.

Botany I. Elementary Botany.—This course follows the outline given in Bulletin No. 24, series of 1906, Bureau of Education; using as text "A Text-book of Botany," by Strasburger, Noll, Schenck, and Karsten. Aside from the regular laboratory work and lectures, instruction is given in the collection, preparation, and determination of vascular plants, and each student must present an herbarium. Familiarity with local ecology is acquired by frequent field trips.

[Fifth year. Mr. DURHAM.

Botany II. Elementary Physiology.—Lectures and collateral reading on growth, nutrition, irritability, reproduction, and variation, with laboratory work on growth and nutrition. The course of instruction follows Pfeffer's Physiology of Plants. Individual garden plots, kept by the students, furnish a part of the material for study and for practice in making records of cultures. Each student is required to keep a record through the year of the growth of fifty plants. While announced for the second year, the work of this course is in practice given during the second and third years in combination with Chemistry I.

[Second year. Mr. HOLMAN.

Botany IIa.—This course is for students preparing for technical work in forestry and is made up of the subject fundamental to forest botany, silviculture, and wood technology.

[Second year. Dr. FOXWORTHY, Mr. HOLMAN.

Botany III. Nutrition.—A thorough experimental study of the nutrition of plants; water, the ash constituents, nitrogen; photosynthesis, respiration, and the better-known metabolic processes. Prerequisite, botany 2 and chemistry 1.

[Elective. Dr. COPELAND, Mr. HOLMAN.

Botany IV. Plant Pathology.—A study of the fungus and bacterial diseases of plants, including their cause, prevention, cure; investigation of the diseases of Philippine crops.

[Elective. Dr. COPELAND, Mr. CUZNER.

Botany X. Botanical Research.—The facilities of the college and the services of its staff are available to advanced students, or to others engaged in botanical investigation. According to the field, such work may be under the direction of Dr. Copeland, Dr. Whitford, or Dr. Foxworthy. Every facility will be given to visiting botanists desiring to become acquainted with tropical plant life or to carry on investigations here.

DEPARTMENT OF AGRONOMY

EDWIN BINGHAM COPELAND, Professor of Economic Botany.
HAROLD CUZNER, Farm Superintendent.
MARIANO MANAS CRUZ, Instructor in Agronomy.

The department of agronomy occupies three rooms in the temporary building of the college, and has under its direction the plant propagating house, the gardens, nurseries, orchards, and cultivated fields. It is provided with all tools and implements needed for the work of the farm or the practice of the students, and such special apparatus as sugar, starch, and feed mills. There are now growing several hundred varieties of plants of economic importance, on a scale ranging from a few individuals to plots of several hectares.

Agronomy I. Principles of Agriculture.—This course takes up climate and its relation to agriculture; the soil, its origin and structure, and methods of management and improvement; propagation of plants; pruning, and methods of combating disease. The lectures cover also the marketing of farm produce, and farm policy and management. Thorough work is given on maize and the forage crops of the Philippines. Students in this course are required to become familiar with agricultural implements and their use, and are given practice in propagating plants by seed, cuttings, grafting, and budding.

[Third year. Lectures: Mr. CUZNER. Field work: Mr. CUZNER, Mr. DURHAM, Mr. CRUZ.

Agronomy II. The Coconut and Fiber Plants.—More than half of the year is devoted to the study of the coconut, covering as much of its physiology as has direct agricultural value; its diseases and their treatment; all steps in its proper cultivation, harvesting, and preparation for market, in the Philippines and elsewhere; and the uses and value of the products. The college has more than 1,000 trees, of various ages. The fiber plants are studied in the same way, but more briefly, especial attention being given to abacá. Prerequisite, Botany II and Chemistry I.

[Fourth year. Dr. COPELAND.

Agronomy III. Farm Crops.—Sugar, tobacco, coffee, rubber, and some minor tropical crops will be taken up in succession, the treatment of each being similar to that of the coconut during the preceding year, but with more attention to selection and breeding.

[Fifth year. Dr. COPELAND, Mr. CUZNER.

Agronomy IVa. Landscape Gardening.—Instruction in the general principles of landscape gardening as a preparation to the student for the intelligent improvement of home or public grounds; a study of the principal herbs and woody plants suited to decorative use in the Tropics.

[First semester.

Agronomy IVb. Vegetable Gardening.—A study of the proper methods of home, and truck or commercial, gardening. The garden crops will be taken up individually, and studies with regard to history, methods of improvement, planting, cultivation, species.

[Second semester; elective. Mr. CUZNER.

Agronomy V. Pomology.—This course will take up orchard practice, including methods of cultivation, harvesting, curing or packing, storing and marketing of the various fruits; attention will be given first to those fruits which have proven themselves suited to local conditions, and secondly, to promising introduced important crop.

[Elective. Mr. CUZNER.

Agronomy X. Research.—The facilities of the department will be placed freely at the disposition of persons qualified to use them in investigations likely to promote the knowledge of tropical agronomy. Students choosing to present theses in this subject may select some minor crop, or some problem relating to an harvesting, and marketing.

[Dr. COPELAND, Mr. CUZNER.

THE FOUR-YEAR COURSE IN AGRICULTURE

The requirements in this course are:

For admission.—The completion of the high-school course, or its equivalent. (See pp. 31 to 39.)

For graduation.—(*a*) A business knowledge of the Spanish language, ability to read scientific German (or French), and one year of general zoölogy. These requirements may be satisfied before or after admission to the college.

(*b*) Completion of the following courses: Botany 2; Agronomy 1, 2, 3, and 4 or 5; Rural Engineering 1; Chemistry 1 and 2; Economic Entomology; Animal Husbandry 1.

(*c*) Completion of two electives based on required courses.

(*d*) Presentation of a thesis representing a year's work on some agricultural problem.

For explanation of these courses, see the preceding pages. The following outline of the course is based on the assumption that the requirements in zoölogy and German are not satisfied before admission:

First year.	Second year.	Third year.	Fourth year.
Botany 2.	Agronomy 1.	Agronomy 2.	Agronomy 4 or 5.
German 1.	German 2.	Rural Engineering 1.	Elective.
Chemistry 1.	Chemistry 2.	Agronomy 3.	Elective.
Zoölogy 1.	Zoölogy 2.	Animal Husbandry 1.	Thesis.

DEPARTMENT OF FORESTRY (FOREST SCHOOL)

GEORGE PATRICK AHERN, LL. B., Professor of Forestry.
HARRY NICHOLS WHITFORD, Ph. D., Associate Professor of Forest Botany and Silviculture.
HUGH MACALLAM CURRAN, B. S., Associate Professor of Forest Management.
FRED WILLIAM FOXWORTHY, Ph. D., Assistant Professor of Dendrology.
DONALD MAXWELL MATTHEWS, M. S. F., Assistant Professor of Forest Engineering.
EDWIN EMIL SCHNEIDER, B. S., Instructor in Wood Technology.
MAURICIO JULIAN OTEYZA, M. F., Instructor in Silviculture.

In April, 1910, the Philippine Legislature passed an act authorizing the Director of Forestry to appoint twenty forest pensionados and to construct temporary buildings for their use. This marked the beginning of the forest school, which was first opened to students in June, 1910. In February, 1911, a second act was passed by the Legislature which further authorizes the Director of Forestry to fill thirty-five scholarships in the forest school, one from each province organized under the Provincial Government Act and from the special Provinces of Palawan, Mindoro, and Batanes. Nine living houses have been constructed for the use of the students as well as a large mess hall and an administrative building. Each student house contains one large or two moderate sized salas and a bedroom capable of comfortably quartering four occupants. The grounds around the students' houses have been parked and a tennis court has been constructed. The buildings and equipment of the College of Agriculture are available for the use of the course in forestry; part of the field work in forest subjects is carried on in the adjoining Maquiling forest reserve. This embraces the entire public forest on Mount Maquiling, including most of the principal forest types of the Philippines. Its proximity to the forest school makes it available for all kinds of field work necessary for a complete course in forestry with the exception of lumbering. For the field work in lumbering each class is taken to the seat of some extensive lumbering operations. During the 1911 vacation, a visit was made to the logging and lumbering plant of the Cadwallader-Gibson Lumber Company in Bataan; in 1912 the students will visit the plant of the Insular Lumber Company in Occidental Negros.

The technical courses in forestry are given by instructors detailed for the purpose by the Bureau of Forestry. To insure a large and competent faculty, the division of investigation of the Bureau has been transferred from Manila and located on the college grounds.

The pensionados are appointed by the Director of Forestry on the recommendation of the Director of Education. The scholarships are restricted to students who have completed at least the second-year of a high-school course. Such students may complete the ranger's curriculum in two years. Upon graduation from the forest school they will be given appointments in the Bureau of Forestry without civil-service examination, and those who qualify by experience will be eligible for promotion. The pensionados each receive a monthly allowance of ₱25, and traveling expenses to and from Los Baños. They are also provided without charge with living quarters and with most of the books and other equipment needed in the courses. Meals in the mess hall cost approximately ₱10 a month. The holders of these scholarships are under contract to enter the employ of the Bureau for as long a period as they shall have enjoyed the privileges of the scholarship. A limited number of private students can also be furnished with free quarters. Private students who have not had the equivalent of the first two years' work in a public high school may take a four years' course in forestry, the work of the first two years being identical with the course in agriculture.

Applicants for scholarships should write to the division superintendent who has jurisdiction over the high school in which they have received their training, requesting him to recommend them to the Director of Education. Notification of such action should be sent at the same time to the Director of Forestry, Manila. If they are sucessful, their names will be certified by the Director of Education to the Director of Forestry and they will be appointed.

RANGER'S COURSE IN FORESTRY

The ranger's course in forestry was established in 1910. It is open to students who have completed two years or more of high-school work or their equivalent.

OUTLINE OF THE RANGER'S COURSE IN FORESTRY

Junior year:
  Botany 2–A.
  Mathematics.
  Physiography, soils, and climatology; first semester.
  Mapping, first semester.
  History, law, and procedure; second semester.
  Forest botany and ecology.
Vacation work:
  Lumbering.
  Camp life.
Senior year:
  Wood technology.
  Forest engineering and mensuration.
  Silviculture.
  Forest management.

BOTANY

Botany 2–A.—A course especially adapted for students in the forest school.

MATHEMATICS

Mathematics 3.—Plane geometry.

Mr. ROXAS.

PHYSIOGRAPHY, SOILS, AND CLIMATOLOGY

Lectures, illustrated locally in the field, on the great factors of physical environment, and on the processes molding the land forms which affect vegetation and soils; physiography and climatology of the Philippines.

[Junior year, first semester. Assistant Professor MATTHEWS.

MAPPING

The use of instruments, mechanical drawing, and lettering; topographic signs; map making; pace survey to give drill in mapping classes of vegetation and types of forest.

[Junior year, first semester. Assistant Professor MATTHEWS.

HISTORY OF FORESTRY

A series of lectures on the history of forestry in Europe, America, and the Orient.

[Junior year, second semester. Professor AHERN.

LAW AND PROCEDURE

Philippine forest and land laws; accounting, records, and forms.

[Junior year, second semester. Assistant Professor MATTHEWS.

FOREST BOTANY AND ECOLOGY

The first part of the year is devoted to the identification and recognition of the trees of the local flora, with special attention to those of commercial importance. This will be followed by a study of the data on which silviculture is based: The relation of forests to moisture, light, wind, altitude, and temperature; soil; density; fire; seeding and seed distribution, etc.

[Junior year. Associate Professor WHITFORD.

LUMBERING

During the summer vacation of 1912 the junior class will be removed to the seat of the extensive lumbering operations of the Insular Lumber Company to be given instruction in lumbering.

[Juniors; vacation. Assistant Professor MATTHEWS.

WOOD TECHNOLOGY

The important Philippine commercial woods will be studied systematically to give facility in identification. The laboratory work will also cover the structure and physical properties of wood, method of preservation, and their effectiveness and timber testing. The lectures will include these subjects and the suitability of Philippine woods for commercial purposes. The minor forest products and industries will be dealt with as fully as their importance warrants.

[Senior year. Assistant Professor FOXWORTHY.
Mr. E. E. SCHNEIDER.

FOREST ENGINEERING AND MENSURATION

Extensive field practice, working from level, plane table, and chain, to the more rapid and less precise methods of traverse board, compass, and pace survey of roads and trails; bridges and general logging construction. Determination of the volume of logs, trees, and stands; timber estimating and preparation of volume and yield tables.

[Senior year. Assistant Professor MATTHEWS.

SILVICULTURE

Philippine forest types, their growth, reproduction, thinning, and cutting. The experience of India and the Malay regions will be drawn upon when dealing with similar types. Part of the course will deal with nurseries, forest planting, and reforestation of cogon areas.

[Senior year. Associate Professor WHITFORD.
Associate Professor CURRAN.
Mr. OTEYZA.

MANAGEMENT

Forest policy and economics; protection, utilization; the preparing of working plans.

[Senior year. Associate Professor CURRAN.

COURSES LEADING TO DEGREE

Courses are offered leading to the degree of Bachelor of Science in Forestry. Students who have graduated from the Philippine high schools or who have equivalent training may receive the degree of Bachelor of Science in Forestry after four years' satisfactory work in residence at the school; or else high-school graduates may take the two-year ranger's course followed by two years of work in the Bureau of Forestry with the approval of the Dean of the College and a final year in residence at the school.

For those candidates for the degree who prefer four years in residence the required subjects are as follows:

FOUR-YEAR COURSE

- First year:
  - Botany 2–A.
  - Mapping, first semester.
  - Mathematics 3, second semester.
  - Chemistry.
- Second year:
  - Physiography, soils, and climatology, first semester.
  - History, law and procedure, second semester.
  - Forest botany and ecology.
- Third year:
  - Wood technology.
  - Silviculture 1.
  - Forest Management 1.
  - Forest Engineering 1.
- Fourth year:
  - Silviculture 2.
  - Forest Management 2.
  - Forest Engineering 2.

Vacation work may be performed after the second or third year, as in the ranger's course. In addition to the subjects enumerated above, two electives will be required, together with a thesis which is expected to involve time equivalent to that of one full study.

For students who have completed the ranger's course and two years of field service in the Bureau of Forestry, the work of the final year will be the same as that of the senior year of the four-year course, including the preparation of a thesis.

List of students, College of Agriculture

GRADUATE STUDENTS

Elayda, Inocencio, B. S. A., Iowa State College.
Roxas, Manuel, B. S. A., University of the Philippines.

UNDERGRADUATES

Abellanosa, Geronimo, Cagayan, Misamis.
Abellanosa, Ricardo U., Cagayan, Misamis.
Abrigo, Eugenio, Tayabas, Tayabas.
Achacoso, Isabelo, Iba, Zambales.
Acordo, Vitaliano, Siniloan, La Laguna.
Adriano, Alfredo P., Malolos, Bulacan.
Africa, Emilio M., Lipa, Batangas.
Albano, Sotero, Dingras, Ilocos Norte.
Allarey, Vicente F., Lucena, Tayabas.
Amarillas, Fernando L., Lucena, Tayabas.
Ambrocio, Diosdado, Santa Cruz, La Laguna.
Ami, Sabino, Lagangilang, Ilocos Sur.
Angeles, Augustin P., Tanauan, Batangas.
Angeles, Justo B., Morong, Rizal.

Asuncion, Agaton, Batac, Ilocos Norte.
Asuncion, Severo, Balayan, Batangas.
Asuncion, Silvestre, Balayan, Batangas.
Atrebido Numeriano, Aparri, Cagayan.
Aurelio, Catalino G., Binalbagan, West Negros.
Bacomo, Pantaleón U., Puerto Princesa, Palawan.
Bagtas, Zacarias, Paombong, Bulacan.
Bagui, Florencio, Batangas, Batangas.
Baguisi, Alberto, Anao, Tarlac.
Balangue, Cornelio, Aringay, La Union.
Banzon, Eustaquio, Balanga, Bataan.
Barros, Cayetano, Bangued, (Abra), Ilocos Sur.
Bartolomé, Vicente C., Tanay, Rizal.
Buenaventura, Perfirio S., Nueva Caceres, Ambos Camarines.
Belen, Leon, Calumpit, Bulacan.
Cailipan, Catalino C., Malolos, Bulacan.
Cailiñgasan, Teofilo, Lipa, Batangas.
Camus, José S., Malabon, Rizal.
Caparros, Inocencio, Alabat, Tayabas.
Capistrano, Severo M., Tanay, Rizal.
Catambay, Atanasio, Tanay, Rizal.
Cerveró, José, Manila.
Ceballos, Felipe O., Guinobatan, Albay.
Cinco, Alejandro, Tanauan, Leyte.
Constantino, Agripino, Morong, Rizal.
Constantino, Marcelino, Morong, Rizal.
Consunji, Gaudencio, Samal, Bataan.
Contreras, Aquilino, Iloilo, Iloilo.
Cor de Cruz, Teotimo, Manila.
Crisostomo, M., Hagonoy, Bulacan.
Cruz, Florencio, Mariquina, Rizal.
Cruz, Florentino F., Montalbon, Rizal.
Cui, José Ma., Batangas, Batangas.
Cuizon, Rufino, Gapan, Nueva Ecija.
Custodio, Simeón C., Tanay, Rizal.
Domingo, Damian C., Camiling, Tarlac.
Dano, Francisco P., Jimenez, Misamis, Mindanao.
Dasmariñas, Simon, Villa Real, Samar.
David, Pedro A., San Fernando, Pampanga.
Dawis, Vicente M., Taal, Batangas.
Dimayuga, José, Lipa, Batangas.
Dosado, José, Pototan, Iloilo Prov.
Esguerra, José P., Tanay, Rizal.
Espino Rafael B., Samal, Bataan.
Fajardo, Ramon R., Gubat, Sorsogon.
Ferraris, Ceferino, Carcar, Cebu.
Fernandez, Rafael, Cuyo, Palawan.
Flores, Simeón S., Dumaguete, Oriental Negros.
Franco, Felix, Mexico, Pampanga.
Galang, Francisco G., S. Simon, Pampanga.
Ghofulpo, Teodorico, Binalbagan, Occidental Negros.
Gomez, Osumundo, Morong, Rizal.
Gonzales, Bienvenido M., Apalit, Pampanga.
Grageda, Gregorio F., Camalig, Albay.
Gutierrez, Florencio, San Pablo, La Laguna.
Guzman, Blas de, Gapan, Nueva Ecija.
Guzman, Felix J., Gapan, Nueva Ecija.
Hernandez, Nemecio, Sta. Cruz, Paombong, Bulacan.
Higuiana, Gaudencio C., San Jacinto, Pangasinan.
Hirro, José B., Ilog, Occidental Negros.
Holanday, Federico A., Bayamban, Pangasinan.
Ilay, Fermin, Sta. Cruz, La Laguna.
Katigbak, Felino M., Lipa, Batangas.
Labayen, Nicolas D., Talisay, Occidental Negros.
Labayen, Segundo G., Talisay, Occidental Negros.
Landay, Federico A. H., Bayamban, Pangasinan.
Laparan, Amando, Lian, Batangas.
Leaño, Benedicto G., San Francisco de Malabon, Cavite.
Leaño, Eladio C., Vintar, Ilocos Norte.

UNDERGRADUATES—continued

Lejano, Antonio, Lian, Batangas.
Leuterio, Eusebio M., Pola, Mindoro.
Liban, Librado A., Tuguegarao, Cagayan.
Lomuntad, Eustaquio, Oras, Samar.
Lopez, Ciriaco, Batac, Ilocos Norte.
Lopez, Juan A., Ligao, Albay.
Lopez, Mariano C., Orion, Bataan.
Lorena, Ponciano, Pagsanjan, La Laguna.
Luistro, Fernando D., Lipa, Batangas.
Macasaet, Emilio B., Lipa, Batangas.
Maceda, Felix N., Pila, La Laguna.
Maceren, Felix, Bilar, Bohol.
Maneja, Cecilio, Torrijos, Marinduque (Tayabas).
Mangubat, Martin, Bauan, Batangas.
Manuel, Fortunato, Sta. Cruz, La Laguna.
Marquez, Francisco D., Lemery, Batangas.
Medrano, Casiano, Lipa, Batangas.
Medrano, Victorino, Lipa, Batangas.
Mendiola, Nemesio, Agono, Rizal.
Mendoza, Deogracias, Obando, Bulacán.
Mendoza, Leoncio, Sta. Maria, Bulacan.
Mercado, Canuto, Iba, Zambales.
Mercado, Miguel, Ibaan, Batangas.
Merino, Gonzalo, Puerto Princesa, Palawan.
Mesa, Alejandro de, Guagua, Pampanga.
Miguel, Lucio San, Morong, Rizal.
Miraflor, Nemesio, Guijuluñgan, Oriental Negros.
Miraflores, José, Victorias, Occidental Negros.
Miranda, Donato P. Peñaranda, Nueva Ecija.
Montellano, Pedro, Boac, Marinduque.
Muñasque, Cruz V., Tindug, Medellin, Cebu.
Muños, Apolonio R., Ligao, Albay.
Nano, José F., Agno, Pangasinan.
Navarro, Andres, F., Albay, Albay.
Nave, Eleuterio B., Imus, Cavite.
Ocampo, Luciano de, Calamba, La Laguna.
Ocfemia, Gerardo O., Guinobatan, Albay.
Octubre, Francisco, San Quintin, Pangasinan.
Oliva, Florencio E., Nasugbu, Batangas.
Ordoño, Anacleto N., Valencia, Bohol.
Organo, Bernardo, Rosales, Pangasinan.
Oro, Maximo, Iloilo, Iloilo.
Padilla, Ramon, Lingayen, Pangasinan.
Pañganiban, Elias, Bukaue, Bulacan.
Palma, Rosalio, Cuenca, Batangas.
Pañares, Salvador, Naga, Cebu.
Pascual, Ismael, San Miguel, Bulacan.
Pastorfide, Dionisio, Santa Cruz, Marinduque.
Paulican, Cenon, Tanay, Rizal.
Peñaloza, Manuel, San Pablo, La Laguna.
Peñas, Nazario P., San José de Lagonoy, Ambos Camarines.
Perez, Domingo, San Carlos, Pangasinan.
Poblete, Donato, Tanauan, Batangas.
Ponce, Severo S., Orani, Bataan.
Quisumbing, Francisco, Los Baños, La Laguna.
Racelis, Antonio P., Lucena, Tayabas.
Raymundo, Mariano B., Morong, Rizal.
Razo, Daniel R., Siniloan, La Laguna.
Recio, Eulogio S., Iba, Zambales.
Remolador, Ricardo, Tagbilaran, Bohol.
Rendal, Bernardo B., Sibulan, Oriental Negros.
Rey, Antonio, Barotac Nuevo.
Reyes, Luis J., Tondo, Manila.
Reyes, Narciso de los, Ibajay, Capiz.
Reyes, Simon A., Lezo, Capiz.
Rivera, José, Kabankalan, Occidental Negros.
Rodriguez, Vicente C., Cebú, Cebú.
Sabino, Rufino R., San Fernando, Pampanga.
Sablan, Eladio, Pagsanhan, La Laguna.
Santos, Alfredo, Malolos, Bulacan.

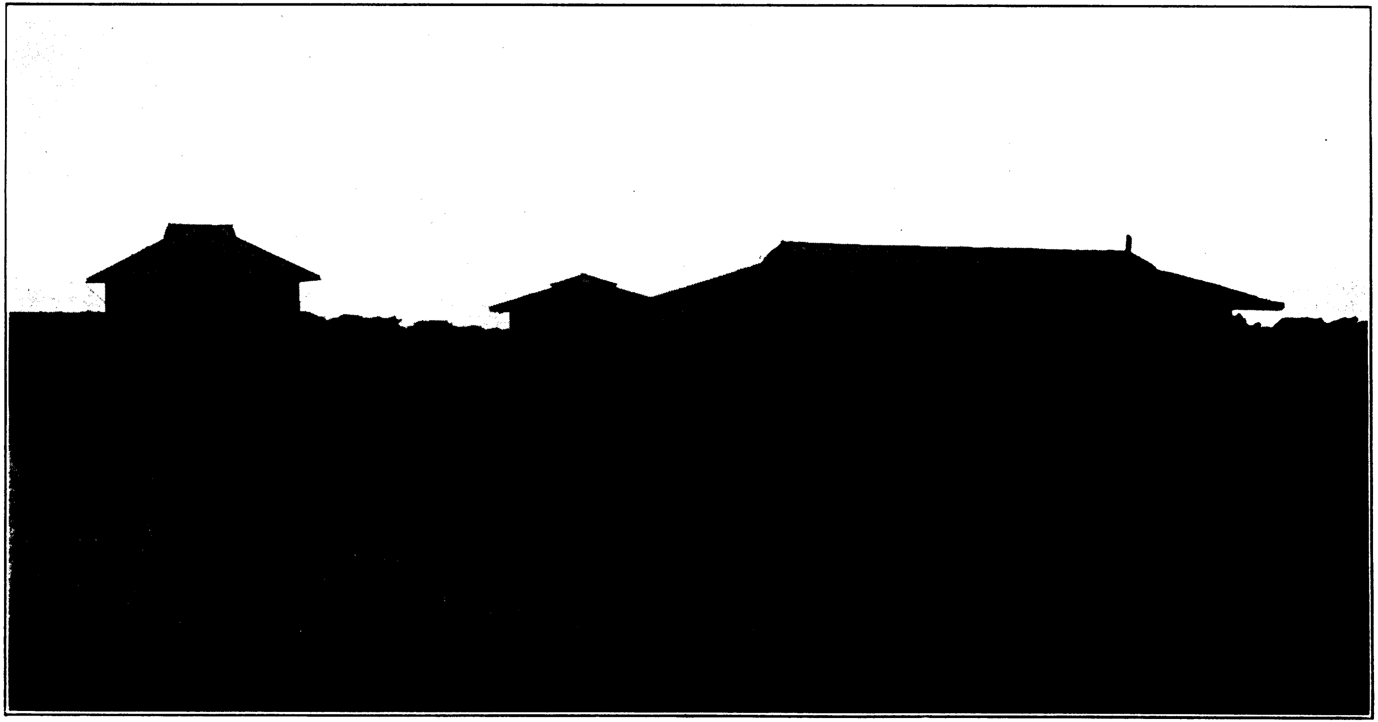
UNDERGRADUATES—continued

Sarmiento, Roman, Batangas, Batangas.
Schück, Alec, Jolo, Jolo.
Siguenza, Pedro, Hinigaran, Occidental Negros.
Silva, Eliseo, Lipa, Batangas.
Soriano, Doroteo, Binalonan, Pangasinan.
Suñga, Mariano, Tarlac, Tarlac.
Suyat, Apolinario, San Fernando, La Union.
Tabat, Evaristo G., Los Baños, La Laguna.
Taguinod, Teodorico T., Tuguegarao, Cagayan.
Tamesis, Florencio, Unisan, Tayabas.
Tañedo, Gregorio, Tarlac, Tarlac.
Tapang, Gisberto, San Juan, Malolos, Bulacan.
Tating, Lucas, San José, Antique.
Teodoro, Nicanor, Santa Cruz, La Laguna.
Ticzon, Pablo G., San Pablo, La Laguna.
Tirona, José, Imus, Cavite.
Uichanco, Leopoldo B., Calamba, La Laguna.
Valencia, Numeriano, Jaro, Iloilo.
Velasco, Vicente R., Iloilo, Panay.
Velasquez, Baldomero T., Pasig, Rizal.
Velez, Blas C., Cagayan, Misamis.
Vibar, Toribio N., Camalig, Albay.
Victorio, Isidro, Pasig, Rizal.
Villamil, Aniceto, Dumaguete, Oriental Negros.
Villanueva, Ramon, Bago, Occidental Negros.
Villegas, Valente, Los Baños, La Laguna.
Vista, Tomás, Nagcarlang, La Laguna.
Yaptinchay, Alberto A., Biñang, La Laguna.
Zarate, Camilo, Tubao, La Union.
Zartiga, Salvador, Manila.
Zulaybar, Eutiquio, Lilio, La Laguna.

THE UNIVERSITY OF THE PHILIPPINES

THE COLLEGE OF VETERINARY SCIENCE

SECOND ANNUAL ANNOUNCEMENT AND CATALOGUE



BUILDINGS OF THE COLLEGE OF VETERINARY SCIENCE

Faculty of the College of Veterinary Science[1]

MURRAY BARTLETT,
President of the University.

ARCHIBALD ROBINSON WARD, B. S. A., D. V. M.,
Acting Dean.

PAUL CASPAR FREER, M. D., Ph. D.,
Professor of Chemistry.

VERNON LEE ANDREWS, M. D.,
Assistant Professor of Pathology and Bacteriology.

HANS ARON, M. D., Ph. D.,
Associate Professor of Physiology.

HARRY DRAKE GIBBS, B. S.,
Associate Professor of Chemistry.

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. D.,
Associate Professor of Zoology.

ALFRED OGLE SHAKLEE, B. S., M. D.,
Associate Professor of Pharmacology.

JAMES REMUS WRIGHT, B. S., Ph. D.,
Associate Professor of Physics.

MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S.,
Assistant Professor of Chemistry.

ALVIN BROERMAN, D. V. M.,
Instructor in Veterinary Anatomy.

VICTOR BUENCAMINO, D. V. M.,
Instructor in Veterinary Surgery.

SAMUEL BERT DURHAM, B. S.,
Instructor in Animal Husbandry.

LECTURERS ON SPECIAL TOPICS[2]

WILLIAM HUTCHENS BOYNTON, D. V. M.,
Pathologist, Lecturer on Pathology and Clinical Microscopy.

MAURICE BRUIN MITZMAIN, M. S.,
Veterinary Entomologist, Lecturer on Veterinary Entomology.

FRED WILLEN WOOD, D. V. M.,
Veterinarian, Lecturer on Serum Prophylaxis in Rinderpest.

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[1] The names of only those giving instruction during the first three years of the course are included.

[2] From the staff of the Bureau of Agriculture, Government of the Philippine Islands.

COLLEGE OF VETERINARY SCIENCE.

HISTORY

The College of Veterinary Science derives its origin from the act founding the University of the Philippines, enacted June 18, 1908, by the First Philippine Legislature, in special session. The first session of the college began in June, 1910.

OBJECTS OF THE INSTITUTION

The enormous losses in the Philippine Islands from diseases of live stock prove the necessity of having educated men to cope with the exceptional difficulties encountered in fighting these diseases. A century ago Europe was stimulated by the ravages of rinderpest to establish the first veterinary colleges enjoying government aid. The same force has now been exerted in the Philippine Islands. The prosperity of these Islands is dependent upon the prosperity of agriculture, and this in turn is conditional upon the presence of a large body of well-trained men capable of coping with the problem of animal diseases.

While rinderpest, a disease of bovines, is now occupying special attention, the combating of surra in horses is of no less importance, and nowhere in the world are there more opportunities for a comparative study of the various diseases of live stock. At present there are no graduate Filipino veterinarians and but few private practitioners of veterinary medicine in the Islands. The First Philippine Legislature displayed wise foresight in providing opportunity for Filipnos to become trained in a profession having a vital relation to the prosperity of the country.

The official attitude of the Bureau of Education of the Government of the Philippine Islands and the hopes for the results of the establishment of the college are reflected in the following circular:

(Circular No. 40, s. 1910.)

BUREAU OF EDUCATION,
Manila, March 18, 1910.

THE COLLEGE OF VETERINARY SCIENCE

To Division Superintendents:

On February 5, 1910, this office issued circular No. 14, with reference to the College of Veterinary Science. Since the issuance of the same the Board of Regents of the Philippine University has revised its action relative to the College of Veterinary Science by providing that admission can be obtained only by those persons who have completed the high-school course of the public schools in the Philippine Islands or its equivalent, this to be determined either by a certificate or by examination to be given by the college.

As this office understands it, this action has been taken by the Board of Regents for the purpose of providing a more complete education to those who shall become graduates of this college so that they will be able to do any part of the work required in the Government service from veterinarians, and so that the Filipino youth may be able hereafter to occupy places in the profession equal to those occupied by graduates of colleges in Europe and America. In Europe especially veterinary science ranks high, and doctors possessing this degree are recognized as men of large scientific attainment.

This departure on the part of the Board of Regents, as it appears to the Bureau of Education, makes this course even more desirable than it was as first proposed. There should be young men in every province of the Islands desirous of taking this course and fitting themselves not only for a place of great usefulness in the community, but for a profession which promises in the Philippine Islands very large pecuniary rewards.

The college will be opened at the beginning of the new school year in June, as heretofore proposed. Students desiring to matriculate should notify the "Secretary of the University of the Philippines, Manila," stating fully the qualifications they possess. New buildings have been specially constructed for this college designed specially for its classes, and every facility will be afforded for adequate instruction.

Division superintendents will see that this circular is posted in every provincial high school and will advertise the facts as to the establishment of this college as widely as possible, giving encouragement to those who are qualified and desiring to enter.

Circular No. 14, heretofore issued, will be disregarded.

FRANK L. CRONE,
Acting Director of Education.

LOCATION AND BUILDINGS

The buildings of the college are located at Pandacan, on the Pasig River, in the suburbs of Manila. Access is to be had by a road leading from Paco, and by ferry at the foot of Calle Nagtahan. The college possesses three reinforced concrete buildings which house the lecture room, the anatomical laboratory, and the clinic. They at present are disconnected units, but form part of a plan for the construction of two groups of buildings arranged around central courts. The campus immediately adjoins the quarantine station of the Bureau of Agriculture. Instruction in laboratory subjects, other than veterinary anatomy, is now given at the College of Medicine and Surgery.

ENTRANCE REQUIREMENTS

Candidates for the degree of Doctor of Veterinary Medicine must comply with the entrance requirements of the University of the Philippines. (See pp. 31 to 38.)

EXAMINATIONS

At the end of each semester, or upon the completion of each subject, there will be an examination, and examinations will be held at such other times during the semester as the instructor of any course may deem necessary.

Promotion from one class to another shall be dependent on the vote of the faculty.

SCHOLARSHIPS

Twenty-five scholarships in the College of Veterinary Science were established by Act No. 2040 of the Second Philippine Legislature.

Act No. 2040.—An Act to appropriate the sum of three thousand five hundred pesos for the creation of Government scholarships in the College of Veterinary Science of the Philippine University.

By authority of the United States, be it enacted by the Philippine Legislature, that:

SECTION 1. Twenty-five Government scholarships for Filipinos are hereby created in the College of Veterinary Science of the Philippine University, to be filled subject to rules prescribed by the Board of Regents of said University: *Provided,* That there shall not be more than ten of these scholarships for the first year of the said college.

SEC. 2. The sum of three thousand five hundred pesos is hereby appropriated, out of any funds in the Insular Treasury not otherwise appropriated, to carry out the provisions of this Act mentioned in the preceding section during the first year.

SEC. 3. The public good requiring the speedy enactment of this bill, the same shall take effect on its passage, in accordance with section one of Act Numbered Nineteen hundred and forty-five of the Philippine Legislature.

Enacted, February 3, 1911.

On January 27, 1912, the Legislature passed an Act appropriating seven thousand pesos for the maintenance of twenty of these scholarships for the college year 1912–13.

RESIDENCE AND REGISTRATION

The college year is nine months long and is divided into two semesters. (For exact dates, see calendar.)

All students must comply with the registration requirements of the university, as outlined on page 41.

Residence in Manila is required of all students, and any change in address must be reported at the office of the Dean.

REQUIREMENTS FOR GRADUATION

In order to receive the degree of Doctor of Veterinary Medicine (D. V. M.) the candidates must have successfully completed the prescribed five-year course to the satisfaction of the faculty, and must be recommended to the Board of Regents by the University Council.

FEES

A fee of ₱5 a semester will be charged in all laboratory or technical courses giving three units of credit for a semester, and ₱10 a semester in those giving more than three units credit for a semester.

DEPARTMENTS OF INSTRUCTION

DEPARTMENT OF VETERINARY ANATOMY

ALVIN BROERMAN, D. V. M., Instructor in Veterinary Anatomy.

The instruction in veterinary anatomy is by lectures, recitations, and laboratory work. The first year is devoted to the comparative study of the bones and articulations of the horse, carabao, and other domestic animals. During the second year and the first semester of the third year there is taken up the complete dissection and comparative study of the muscles, ligaments, vascular and nervous systems, organs of the senses, and the organs contained in the abdominal and thoracic cavities. The work during the last semester is topographic in character as far as possible, with special emphasis given to those parts most subject to surgical operations.

Text-book: Sisson's Veterinary Anatomy.

Veterinary Anatomy 1. Osteology and Arthrology.—Two credit hours. First year, first and second semester.

Veterinary Anatomy 2. Myology and Splanchnology.—Six credit hours. Second year, first and second semester.

Veterinary Anatomy 3. Angiology, Neurology and Aesthesiology.—Ten credit hours. Third year, first semester.

DEPARTMENT OF ZOOLOGY

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. D., Associate Professor of Zoology, Chief of Department.
RHEINART PARKER COWLES, B. A., Ph. D., Assistant Professor of Zoology.

Zoölogy 1ab. Comparative Zoölogy.—A few of the most important types of invertebrates will be studied. More than half of the time of the course will be devoted to vertebrates; the anatomy of the shark, lizard, bird, and mammal will be studied. Considerable attention will be given to the natural history of the mammals, and their geographical and geological history.

Given in the department of animal biology at the Medical School. (1 to 3.30 p. m. on Monday, Tuesday, and Wednesday during the first and second semesters of the first and second year.)

[7½ hours throughout the year; 6 units. Associate Professor GRIFFIN.
Assistant Professor COWLES.

Anatomy 2. Histology.—Laboratories, 1 to 4 p. m., Thursday, Friday; recitations, 10.30 to 11.30 a. m., Thursday, Friday, Saturday; first semester.

The tissues and organs of the human body will be studied in the laboratory, the work there closely following the text-book. On account of the limited time of the course no practice in technique is given. Students who desire instruction and practise in technique may make arrangements for such during vacations, or at any other available time.

Text-book: Stöhr, Text-book of Histology.

This course is open to first-year medical students and to all others who are prepared.

[9 hours, first semester; 3 units.
Associate Professor GRIFFIN.
Assistant Professor COWLES.

Zoölogy 3. Embryology.—Laboratories, 1 to 4 p. m., Thursday and Friday; recitations 10.30 to 11.30 a. m., Thursday, Friday, Saturday; second semester.

The laboratory work consists largely of the study of the development of the duck and pig. This is accompanied by lectures and recitations on human embryology. A large series of models of the development of various organs and animals is available for the use of the students.

Text-book: McMurrich, The Development of the Human Body.

[9 hours, second semester; 3 units.
Associate Professor GRIFFIN.
Assistant Professor COWLES.

DEPARTMENT OF CHEMISTRY

PAUL CASPAR FREER, M. D., Ph. D., Professor of Chemistry, Chief of Department.
HARRY DRAKE GIBBS, B. S., Associate Professor of Chemistry.
MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S., Assistant Professor of Chemistry.
JOSE I. DEL ROSARIO, B. A., Instructor in Chemistry.

The course of instruction in chemistry will consist of laboratory work with lectures and recitations. During the first year the students will complete the course in general inorganic chemistry, with special reference to physical chemistry, with laboratory work including the elements of qualitative analysis.

During the second and third year, the course will include the fundaments of organic chemistry, laboratory work in organic chemistry, laboratory work in organic preparations and quantitative methods, especially those of volumetric analysis. The analysis of urine will also be included. The laboratory work will be varied according to the grade of preparation of the student.

Students who are capable may complete this course in two years and take special work the third year.

DEPARTMENT OF PHYSICS

JAMES REMUS WRIGHT, B. S., Ph. D., Associate Professor of Physics, Acting Chief of Department.

Physics 1ab. General Physics.—Properties of matter, mechanics, and heat. Laboratory exercises twice a week; lecture and recitation, each once a week.

[6 hours throughout the year; 6 units.

Physics 2ab. General Physics.—Sound, light, energy transformation, electricity and magnetism. Lectures, recitations, and laboratory exercises, each once a week.

[5 hours throughout the year; 6 units.

DEPARTMENT OF PHYSIOLOGY

HANS ARON, M. D., Ph. D., Associate Professor of Physiology, Chief of Department.
FELIX HOCSON, B. A., Phar. C., Demonstrator in Physiology.

The plan of instruction will cover the following subjects in order named (first semester of the course): the human body and its composition; the blood and its components; the heart and vascular system; the physiology of circulation; respiration; secretion; digestion and absorption; excretion; metabolism and nutrition, animal heat.

DEPARTMENT OF PHARMACOLOGY, TOXICOLOGY, AND MATERIA MEDICA

ALFRED OGLE SHAKLEE, B. S., M. D., Associate Professor of Pharmacology, Chief of Department.

The students will receive a systematic course of lectures and demonstrations as well as laboratory work upon the physiologic action of drugs, together with a consideration of their origin, their mode of preparation and their therapeutic application. Toxicology and materia medica will also be considered in this course.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY

VERNON LEE ANDREWS, M. D., Assistant Professor of Pathology and Bacteriology, Chief of Department.

In bacteriology the students become familiar with the principles of sterilization and disinfection, the preparation of culture media, and the methods of cultivating, staining and studying bacteria. The biological examination of air and water and the more important species of pathogenic microörganisms are then considered. Special attention is devoted to the preparation and mode of action of vaccines. The hygienic as well as the pathological relations of bacteriology are kept in mind. In pathology the student is required to stain and mount the sections of tissue that are given for microscopical study. He is also required to assist at autopsies. Thus he becomes acquainted with the gross anatomy as well as the histology of the more common pathologic lesions. The course includes general and special pathologic anatomy and histology.

The laboratory work in both subjects will be supplemented by demonstrations, recitations and lectures.

DEPARTMENT OF ANIMAL HUSBANDRY

SAMUEL BERT DURHAM, B. S., Instructor in Animal Husbandry.

This course will be arranged to best meet the needs of the veterinarian in the Philippines.

Subjects.—Types and breeds of farm animals. The origin, development, adaptability, and characteristic of the leading breeds of farm stock and poultry will be studied by students, and a limited amount of score card work given. The chief object of this course is to demonstrate the relation of conformation to function in various types of farm animals. Students will be given practice in determining the age and weight of these animals. This work will be given in lectures and outdoor demonstrations.

Feeds and feeding.—The elements of animal food and their uses; assimilation; composition of feeds, and compounding of rations.

OUTLINE OF COURSES

SCHEDULE OF THE FIRST YEAR

First semester.	Units.	Second semester.	Units.
Chemistry 1	3	Chemisry 2	3
Physics 1a	3	Physics 1b	3
English 1a	3	English 1b	3
Animal Biology 1a	3	Animal Biology 1b	3
Mathematics 4	3	Mathematics 1	3
Osteology	2	Veterinary Anatomy	2
Total	17	Total	17

SCHEDULE OF THE SECOND YEAR

Chemistry 3	3	Chemistry 4	3
Chemistry 5a	2	Chemistry 5b	2
Physics 2a	3	Physics 2b	3
Histology	3	Embryology	3
Veterinary Anatomy 2	6	Veterinary Anatomy 2	6
Total	17	Total	17

SCHEDULE OF THE THIRD YEAR

Veterinary Anatomy 3	10	Physiology	5
Physiology	5	Animal Husbandry	5
Animal Husbandry	3	Bacteriology	5
Total	18	General Surgery	4
		Total	19

OUTLINE OF COURSES—Continued

SCHEDULE OF THE FOURTH YEAR

First semester.	Units.	Second semester.	Units.
General Pathology	6	Medicine	5
Surgical Exercises	1	Obstetrics	4
Parasitology	2	Infectious Diseaees	2
Pharmacology	3	Diseases of Small Animals	2
Milk Inspection	4	Veterinary Sanitary Science	3
Materia Medica and Therapeutics	3	Clinic, Small Animals	1
Total	19	Clinic, Large Animals	1
		Total	18

SCHEDULE OF THE FIFTH YEAR

Special Surgery	4	Special Pathology	2
Meat Inspection	1	Medicine	5
Special Pathology	2	Canine Surgery	2
Horse Shoeing	3	Veterinary Jurisprudence	2
Veterinary Sanitary Science	3	Clinic, Small Animals	3
Ophthalmology	1	Clinic, Large Animals	3
Clinic, Small Animals	2	Total	17
Clinic, Large Animals	2		
Total	18		

First-year students, 1911–12

Balagot, José, H., Bauang, La Union.

Borromeo, José, R., Manial, P. I.

Dumlao, Alejandro, San Narciso, Zambales.

Galang, José, Manila.

Mañalac, Gabriel, Balanga, Bataan.

Montellano, Isidoro, Boac, Marinduque.

Olympia, Manuel, Boac, Marinduque.

Panganiban, Crisanto, Ibaan, Batangas.

Sanson, Emilio, Hinigaran, Negros Occidental.

San Agustine, Gregorio, San Roque, Cavite.

Tabora, Manuel, Aparri, Cagayan.

Second-year students, 1911–12

Gomez, Angel, K., San Roque, Cavite.

Lecaros, Alfonso, Boac, Marinduque.

Third-year students, 1911–12

Gison Ambrosio, Iloilo.

THE UNIVERSITY OF THE PHILIPPINES

THE COLLEGE OF ENGINEERING

SECOND ANNUAL ANNOUNCEMENT AND CATALOGUE

Faculty of the College of Engineering

MURRAY BARTLETT,
President of the University.

CLARENCE WRENTMORE, C. E.,
Professor of Engineering, Dean of the College of Engineering, 1912-13.

PAUL CASPAR FREER, M. D., Ph. D.,
Professor of Chemistry.

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. B., Ph. D.,
Acting Dean of the College of Engineering, 1911-12.

WILLIAM JOSEPH COLBERT, B. A.,
Associate Professor of Mathematics.

HARRY DRAKE GIBBS, B. S.,
Associate Professor of Chemistry.

JAMES REMUS WRIGHT, B. S., Ph. D.,
Associate Professor of Physics.

RHEINHART PARKER COWLES, B. A., Ph. D.,
Assistant Professor of Zoology.

DEAN SPRUIL FANSLER, B. A.,
Assistant Professor of English.

HARRIOTT ELY FANSLER, B. A.,
Assistant Professor of English.

MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S.,
Assistant Professor of Chemistry.

JOSE PATRICIO KATIGBAK, B. A., B. S., [1]
Instructor in Graphics.

AMBROSIO MAGSAYSAY, C. E.,
Instructor in Drawing.

CHARLOTTE ELIZABETH NEALE, B. A.,
Instructor in History.

JOSE IGNACIO DEL ROSARIO, B. A., M. S.,
Instructor in Chemistry.

RANDALL ADAMS ROWLEY, B. S.,
Instructor in Geology.

ALEXANDER EDWARD WROTHESLEY SALT, B. A., M. A.,
Instructor in History and Economics.

ROY STANLEY SWINTON, B. C. E.,
Instructor in Surveying.

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[1] Resigned.

COLLEGE OF ENGINEERING

HISTORY AND GENERAL INFORMATION

The College of Engineering was opened, and instruction in the first year of the civil engineering course was begun on June 13, 1910. Graduates of four-year high-school courses were admitted at that time to the first year of the civil engineering course, which course was to consist of five years of study.

On January 31, 1911, the Board of Regents decided to require two years of college work as a preparation for the engineering course, and changed the latter to consist of four years of purely professional studies.

The preparatory engineering course is outlined on page 71.

All candidates for admission to the College of Engineering must present two years of college work equivalent to the course thus outlined.

The course in civil engineering is planned to meet the special requirements of the Philippines at this time. As the country develops, and industry becomes more complex and varied, the courses of the College of Engineering will be developed to meet these requirements.

DEPARTMENTS OF INSTRUCTION

DEPARTMENT OF CHEMISTRY

PAUL CASPAR FREER, M. D., Ph. D., Professor of Chemistry.
HARRY DRAKE GIBBS, B. S., Associate Professor of Chemistry.
MARIANO VIVENCIO DEL ROSARIO, Phar. D., M. S., Assistant Professor of Chemistry.
JOSE IGNACIO DEL ROSARIO, B. A., M. A., Instructor in Chemistry.

Chemistry 1 and 2. General Inorganic Chemistry.—Lectures, recitations, and laboratory work.

[9 hours through the year; 6 units.
Associate Professor GIBBS.
Assistant Professor DEL ROSARIO.
Mr. JOSÉ I. DEL ROSARIO.

Chemistry 5. Qualitative Analysis, Inorganic.—Lectures, recitations, and laboratory work.

[7 hours, second semester; 3 units. Assistant Professor DEL ROSARIO.

DEPARTMENT OF CIVIL ENGINEERING

CLARENCE WRENTMORE, C. E., Professor of Engineering, Chief of Department.

Civil Engineering 1. Structural Mechanics.—Must be preceded or accompanied by Mathematics 6 E.

[5 hours, first semester; 5 units.

Civil Engineering 2. Testing Laboratory.—The ordinary tests of the common materials of construction, with especial attention to Philippine conditions. Must be preceded by Course 1.

[Two half days, second semester; 2 units.

Civil Engineering 3. Testing Laboratory.—Continuation of Course 2.

[Two half days, first semester; 2 units.

Civil Engineering 4. Theory of Structures.—Analysis of forces in simple roof and bridge trusses. Analytical and Graphical methods. Text-book and problems. Must be preceded by Course 1.

[3 hours, second semester; 3 units.

Civil Engineering 5. Theory of Structures.—Continuation of Course 4. Analysis of forces in framed structures. Lectures, text-book, problems. Must be preceded by Course 4.

[5 hours, first semester; 5 units.

Civil Engineering 6. Theory of Structures.—An advanced elective, a continuation of Course 5. Secondary stresses, statically indeterminate structures. Lectures, text-book, collateral reading, problems. Must be preceded by Course 5.

[3 hours, first semester; 3 units.

Civil Engineering 7. Design of Structures.—Simple problems in roof and bridge design. Must be preceded or accompanied by Civil Engineering 5.

[5 afternoons, second semester; 5 units.

Civil Engineering 8. Design of Structures.—Continuation of Course 7. Must be proceded or accompanied by Course 9.

[3 afternoons, first term; 3 units.

Civil Engineering 10. Hydraulics.—Theory of mechanics of fluids. Flow and measurement of water, water motors, and pumps. Lectures, text-book, and problems. Must be preceded by Course 1.

[5 hours, second semester; 5 units.

Civil Engineering 11. Irrigation.—Rainfall, run-off, irrigation works, irrigation law, river training and control. Must be preceded by Courses 9 and 10 and by Law 1E.

[5 hours, first semester; 5 units.

Civil Engineering 12. Municipal Engineering.—Roads and streets, water supply, fire protection, sewerage, garbage disposal, and sanitation. Must be preceded by Civil Engineering 2, 3, 4, and 10, by Biology 20E, and accompanied by Law 1E.

[5 hours, first semester; 5 units.

Civil Engineering 13. Principles of Mechanism.—Kinematics of machine elements, gearing, linkages, belting and trains, graphical statics, forces, reactions, and efficiencies. Must be preceded by Mathematics 6E.

[5 hours, first semester; 5 units.

Civil Engineering 14. Heat Engines.—Fuels and combustion, steam engines and boilers, steam turbines, internal combustion engines, gas producers. Must be preceded by Civil Engineering 13.

[5 hours, second semester; 5 units.

Civil Engineering 15. Thermodynamics.—Mechanics of gases. Special reference to heat engines, compressed air machinery, and refrigeration. Must be preceded by Mathematics 6E and Civil Engineering 14.

[2 hours, second semester; 2 units.

Civil Engineering 16. Electrical Machinery.—Dynamos, electric machinery, and transformers. Must be preceded by Physics 6E.

[4 hours, first semester; 4 units.

Civil Engineering 17. Power Plants and Transmission.—Steam, gas, and hydraulic plants, mechanical and electrical transmission. Lectures, text-books, problems. Must be preceded by Civil Engineering 14 and 16.

[3 hours, second semester; 3 units.

Civil Engineering 18. Design of Power Plants.—Continuation of Course 17 and application to special problems.

[5 afternoons, second semester; 5 units.

Civil Engineering 19. Railroad Maintenance of Way.—Standards, buildings, equipment. Lectures, text-book, collateral reading.

[2 hours, second semester; 2 units.

Civil Engineering 20. Economics of Railway Location.—Lectures, text-book, collateral reading.

[3 hours, first semester; 3 units.

Civil Engineering 21. Electric Railways.—Equipment and construction. Lectures, text-book, collateral reading.

[2 hours, first semester; 2 units.

Civil Engineering 22. Seminary.—Special studies and reports on engineering subjects and projects of current historical and biographical importance.

[3 hours, first semester; 3 units.

Civil Engineering 23. Seminary.—Continuation of Course 22.

[3 hours, second semester; 3 units.

DEPARTMENT OF DRAWING

AMBROSIO MAGSAYSAY, C. E., Instructor in Drawing.

Students entering courses in this department must provide themselves with the following equipment:

Theodore Alteneder No. 2066, Catalogue 21st Edition; Keuffel & Esser. No. 623–1, Catalogue 1909. Drawing board, size 60 by 80 centimeters; T square, size 30 inches; 2 triangles—one 8 inches, 45°, one 10 inches, 30°–60°; 2 irregular curves—K. & E. Nos. 4 and 26; 1 triangular scale, 30 centimeters long, graduated .01, .02, .03, .05, .025, .125; 1 dozen thumb tacks; 2 Koh-i-noor pencils, 3H, 6H; erasers, pencil and ink; Higgins's drawing inks, black, red, and blue.

The cost of the case of instruments is about ₱50 and the rest of the articles about ₱10.

Drawing 1. Mechanical Drawing.—Lettering: Characteristics and proportions of standard letters; design of lettering; methods of spacing; design of titles.

Text-book: Reinhardt, Free-Hand Lettering.

Linear and free-hand drawing: Principles and definitions of mechanical drawing; exercises in the use of instruments; reproduction of drawings; cross sectioning; selected geometrical problems; tracing.

[9 hours, first semester; 3 units.

Drawing 2. Descriptive Geometry.—Representations of lines, planes, and surfaces, and of their relations; tangencies, intersections, and developments; warped surfaces.

[9 hours, second semester; 3 units.

Drawing 3. Advanced Projections and Stereotomy.—This course consists of the application of principles of descriptive geometry to the solution of problems in orthographic, central, and oblique projections, illustrated by examples in shades, shadows, perspective and stereotomy or stone cutting. It must be preceded by Course 2. Recitations, lectures, and drawing.

[10 hours, first semester; 5 units.

DEPARTMENT OF ENGLISH

DEAN SPRUILL FANSLER, B. A., M. A., Assistant Professor of English.
HARRIOTT ELY FANSLER, B. A., M. A., Assistant Professor of English.

LANGUAGE COURSE

English 1 and 2, E. Composition.—A practical course in writing and speaking English. One day a week is devoted to a study of idiom and to the correction of typical errors in English; and one day to oral expositions of assigned topics, accompanied by written themes, which are carefully criticised for form, diction, and content, and, having been corrected by the students, are subsequently returned to the instructor. In addition to the weekly themes at least six long compositions will be required of each member of the class during the year.

[3 hours throughtout the year; 6 units.
Assistant Professor D. S. FANSLER.
Assistant Professor H. E. FANSLER.

English 20–8E. Technical Literature.—Assigned readings, with oral and written discussions, current technical literature. 2 hours, second semester; 2 units.

DEPARTMENT OF GEOLOGY

RANDALL ADAMS ROWLEY, B. S., Instructor in Geology.

Geology 3. Elementary Geology.—A short course in dynamical and structural geology to meet the needs of students of engineering

[3 hours, first semester; 3 units.

Geology 4. Mineralogy.—A detailed study of the chemical and physical properties of common rock-making minerals, and of some of the rare minerals of economic importance. The course includes an examination consisting of the identification of unknown specimens.

[6 hours, first semester; 3 units.

DEPARTMENT OF HISTORY

ALEXANDER EDWARD WROTTESLEY SALT, B. A., M. A., Instructor in History and Economics.
CHARLOTTE ELIZABETH NEALE, B. A., Instructor in History.

Economics 3–E.—A consideration of the leading principles of economics, as illustrated in national, state, and municipal government.

These principles will be applied in the solution of practical problems such as may confront an engineer in the practice of his profession, and graphical methods will be used wherever possible.

Lectures, text-books, and collateral readings.

Economics 4-E.—A course dealing with economic questions connected with railway organization. Such questions as capitalization, financial management, transportation, and government control will be carefully considered. While the Philippine railway system will be taken as a basis of study, a comparison will be drawn between local conditions and those existing in other countries in the Orient. Each student will be expected to work out in detail some essential problem.

Lectures and collateral readings.

DEPARTMENT OF MATHEMATICS

WILLIAM JOSEPH COLBERT, B. A., Associate Professor of Mathemathics, Acting Chief of Department.

THOMAS JOSEPH FREEMAN, B. A., Instructor in Mathematics.

Mathematics 6 and 7, E. Engineering Mathematics.—First year: Algebra, solid geometry, plane trigonometry, and analytical geometry. This course is required of preparatory engineering students.

Text-books: Wentworth, Solid Geometry; Wentworth, Plane and Spherical Trigonometry; Well's Advanced Course in Algebra.

[10 hours throughout the year; 10 units.

Mathematics 8 and 9, E. Engineering Mathematics.—Second year: A continuation of Course 6 and 7, consisting of analytical geometry, differential and integral calculus.

Text-books: Ashton, Analytical Geometry; Snyder and Hutchinson, Calculus.

[10 hours throughout the year; 10 units.

Mathematics 15-E. Calculus and Mechanics.—In this course the work in integral calculus is completed and a short course given in the simplest forms of the differential equation; the remainder of the semester is devoted to kinematics and statics.

[5 hours, first semester; 5 units.

Mathematics 16-E. Mechanics.—In this course the work in theoretical mechanics, including statics, dynamics, and kinetics is completed.

[5 hours, second semester; 5 units.

Mathematics 18-E. Accounting.—Methods of accounting and cost keeping for engineering work.

[2 hours, second semester; 2 units.

DEPARTMENT OF PHYSICS

JAMES REMUS WRIGHT, B. S., Ph. D., Associate Professor of Physics, Acting Chief of Department.

Physics 3-E. General Physics.—A course of lectures, demonstrations, and recitations covering the subjects of mechanics, molecular physics, and heat. Intended primarily for preëngineering students and for students specializing in science. Prerequisite, Entrance Physics and Trigonometry.

[3 hours, first semester; 3 units.

Physics 4–E.—A continuation of 3–E, covering the subjects of electricity, sound, and light, especial attention being given to the applications of electricity to technical work.

[3 hours, second semester; 3 units.

Physics 5 and 6, E. Electricity, Sound, and Light.—A laboratory course in electricity, sound, and light, supplemented by lectures and classroom work. Prerequisite, Physics 3 and 4 and Trigonometry.

[6 hours throughout the year; 6 units. Associate Professor WRIGHT.

Physics 7 and 8. Analytic Mechanics.—A mathematical treatment of the fundamental principles of dynamics and statics, especial attention being given to the application of principles and to the solution of problems. Prerequisite, Physics 3–E and 4–E and Differential and Integral Calculus.

[3 hours throughout the year; 6 units. Associate Professor WRIGHT.

DEPARTMENT OF SURVEYING

ROY STANLEY SWINTON, B. C. E., Instructor in Surveying.

Surveying 1. Use and care of Instruments.—Lectures, textbook, recitations, and field work. Includes Traverse Surveys, Circular Curves, Leveling, Note Keeping and Computation.

[4 afternoons, first semester; 4 units.

Surveying 2. Special Surveys and Topographic Mapping.—Four recitations a week, field and office work. Recitations on earth work, land surveying, special surveys, and adjustment of instruments. Field work consists of making topographic surveys by the plane-table, stadia, and photographic methods. Office work includes finished maps from each of the above surveys, one plate of conventional signs, and one profile showing geological structures.

[4 afternoons, second semester; 4 units.

Surveying 3. Field Work in Camp.—Includes triangulation, base-line measurement, aximuth observations, topographic and hydrographic surveys, weir guaging, land surveying, survey for a railroad line.

[8 weeks, during vacation, 8 units.

Surveying 4. Geodesy, and Field Astronomy.—Includes computations based on observations of Course 3, the projection of maps, time and azimuth computations; recitations, and historical papers on geodesy.

[10 hours, second semester; 5 units.

DEPARTMENT OF ZOOLOGY

LAWRENCE EDMONDS GRIFFIN, B. A., Ph. D., Associate Professor of Zoology and Chief of the Department.
REINHART PARKER COWLES, B. A., Ph. D., Assistant Professor of Zoology.
LAWRENCE DILLER WHARTON, B. A., Instructor in Zoology.

Zoölogy 10.—A course treating of the biological problems involved in water supplies, sewerage, and sanitation.

[15 hours, second semester; 5 units.

SHOP PRACTICE

Shop 1. Woodwork.—Elementary exercises in the use of tools, pattern making, and lathe work.

[4 half days, second semester; 4 units.

Shop 2. Forge and Machine Work.—Practise in forging; elementary exercises in welding, tempering. In machine work, bench work, lathe, and shaper.

[8 weeks, vacation period; 8 units.

CIVIL ENGINEERING COURSE

VACATION TERM OF EIGHT WEEKS

Surveys 3 .... 8 units

FIRST YEAR

First semester.	Units.	Second semester.	Units.
Chemistry 5. Qualitative	3	Shop 1. Woodworking	4
Drawing 3. Advanced projection and stareotomy	5	Physics 6	3
Physics 5	3	Mathematics 6-E. Mechanics	5
Mathematics 5-E. Calculus and mechanics	5	Biology 20-E	5
Total	16	Total	17

VACATION TERM OF EIGHT WEEKS

Shop 2. Forge and machine work .... 8 units

SECOND YEAR

Geology 3. Elementary	3	Civil Engineering 4. Theory of structures	3
Geology 4. Mineralogy	3	Civil Engineering 10. Hydraulics	5
Civil Engineering 1. Structural mechanics	5	Civil Engineering 2. Testing laboratory	2
Civil Engineering 13. Principles of mechanism	5	Civil Engineering 14. Heat engines	5
Total	16	English 3-E. Technical literature	2
		Total	17

CIVIL ENGINEERING COURSE—Continued

THIRD YEAR

Civil Engineering 12. Municipal engineering	5	Civil Engineering 15. Thermodynamics	2
Civil Engineering 5. Theory of structures	5	Civil Engineering 17. Power plants and transmission	3
Civil Engineering 3. Testing laboratory	2	Civil Engineering 9. Masonry and foundations	5
Civil Engineering 3. Electrical machinery	4	Civil Engineering 7. Design of structures	5
Law 1-E. Elementary law	2	Law 2-E. Contracts	2
Total	18	Total	17

FOURTH YEAR

First semester.	Units.	Second semester.	Units.
Civil Engineering 11. Irrigation	5	Civil Engineering 18. Design of power plants	5
Civil Engineering 8. Design of structures (continued)	3	Civil Engineering 23. Engineering seminary (continued)	3
Civil Engineering 22. Engineering seminary	3	Mathematics 7-E. Accounting	2
Law 3-E. Contracts (continued)	2	Law 4-E. Agency	2
Total	13	Total	12

The following substitutions may be made:

(*a*) Civil Engineering 11 may be omitted and Civil Engineering 6 elected.

(*b*) Civil Engineering 11 and Civil Engineering 15 may be omitted and Civil Engineering 21 and Law 5-E elected.

(*c*) Civil Engineering 11 and Civil Engineering 15 may be omitted and Civil Engineering 19, Civil Engineering 20, 21, and Economics 3-E and 4-E elected.

The above work is required for graduation. During the last two semesters students may elect additional work, the selection being subject to approval by the Dean.

Second-year students (old course)

Borromeo, Canuto O., Cebú, Cebú.
Corcuera, Aurelio L., Manila.
Fabella, Vicente, Pagsanjan, Laguna.
Garcia, Gonzalo, Botolan, Zambales.
Guanio, Domingo T., Gapan, Nueva Ecija.
Gullas, Paulino, Cebú, Cebú.
Lozano, Manuel, Boac, Marinduque.
Montemayor, Marcellano, Alaminos, Pangasinan.
Nostratis, Ricardo, San Roque, Cavite.
Reyes, Teofilo, Bocaue, Bulacan.
Villegas, Arsenio, 557 Camba, San Nicolas, Manila.

Total attendance, 11.

THE UNIVERSITY OF THE PHILIPPINES

THE COLLEGE OF LAW

SECOND ANNUAL ANNOUNCEMENT AND CATALOGUE

Faculty of the College of Law

MURRAY BARTLETT, B. A., M. A., D. D.,
President of the University.

OFFICERS OF THE FACULTY

SHERMAN MORELAND, B. L., LL. B.,
Acting Dean.

GEORGE A. MALCOLM, B. A., LL. B.,
Secretary.

PROFESSORIAL LECTURERS

ADAM C. CARSON, LL. B.,
Professorial Lecturer on Government.

AMASA S. CROSSFIELD, LL. B., LL. M.,
Professorial Lecturer on Law.

CHARLES BURKE ELLIOTT, LL. B., LL. D., Ph. D.,
Professorial Lecturer on International Law.

CHARLES SUMNER LOBINGIER, Ph. D., LL. M.,
Professorial Lecturer on Law.

LECTURERS ON LAW

GEORGE BOCOBO, LL. B.
CLYDE A. DE WITT, LL. B.
WASHINGTON L. GOLDSBOROUGH, LL. B.
GEORGE ROGERS HARVEY, LL. B.
FRANK B. INGERSOLL, B. A.
CARLOS A. SOBRAL, B. A., LL. M.

LECTURERS ON SPECIAL TOPICS

JOHN W. FERRIER, LL. B.
JOHN P. WEISSENHAGEN.

INSTRUCTOR IN PUBLIC SPEAKING

WALLACE L. WRIGHT, B. S., LL. B.

COLLEGE OF LAW

GENERAL INFORMATION

The Board of Regents provided for the establishment of a College of Law in the University of the Philippines on January 12, 1911. The college was opened in July of the same year with two classes doing work. Beginning with the school year 1912–13, all four years of the prescribed courses of instruction will be offered.

The aim of the college is to furnish facilities for legal training in English, covering all the fundamental law subjects necessary for the practice of law in the Philippine Islands. Competent instructors, including leading members of the bar and judiciary, compose the faculty. Thorough and practical instruction is given.

REQUIREMENTS FOR ADMISSION

Applicants for admission in 1912 must present a certificate showing the completion of one year of study in the preparatory law course in the College of Liberal Arts, University of the Philippines (described on p. 70 hereof), or its equivalent. In 1913 and thereafter applicants for admission to the College of Law must have completed the two years' preparatory law course in the College of Liberal Arts, or its equivalent.

Students desiring advanced standing should forward or hand to the dean the certificate described on page 40 of this catalogue. The requirements for admission of special students are also hereinbefore set forth on page 41.

As a prerequisite to admission, candidates are required to submit to a medical examination.

FEES AND EXPENSES

The tuition fee is ₱75 per year if paid at the beginning of the first semester. If paid at the beginning of each semester the tuition fee is ₱40. In addition, all students are required to pay the sum of ₱1 each semester into the treasury of the Athletic Association. All fees must be paid in advance.

Text-books are purchased by the students.

TIME AND PLACE

Classes will be held in the building No. 306 Calle Isaac Peral, Ermita. Should a different building be secured for the school year 1912–13, students, on reporting for registration to the office of the Registrar of the University, in the College of Medicine and Surgery, Calle Herran, will be so informed.

The academic year 1912–13 will begin on July 1, 1912, and will end on or about March 30, 1913.

The meetings of each course will extend over a period of one hour, beginning at either 5.30, 6.30, or 7.30 p. m., of every week day, as assigned.

ENROLLMENT IN COURTS OF FIRST INSTANCE

Rule VI of the Supreme Court, for the examination of candidates for admission to the practice of law, requires all persons commencing the study of law to register their names in the office of the clerk of court of the province in which they pursue their studies (Court of First Instance of Manila) within the month of June of each year for three consecutive years.

ATHLETICS

All students are required to take systematic physical exercise, provided they shall be certified as fit therefor by the medical examiner. They must choose, at the beginning of each semester, the branch of athletics in which they wish to participate. Should any student, for exceptional reasons, be excused from athletics by the dean, such student will be required to present a signed statement at the end of each semester to the effect that he has taken an average of two hours' exercise each week.

LIBRARIES

A practical working law library is being developed in the college. Students also have access to the Philippines General Library and the Circulating Library of Manila, under regulations hereinbefore described, and to the libraries of the Supreme Court and the office of the Attorney-General.

REQUIREMENTS FOR GRADUATION

It is the purpose of the college that its work shall be characterized by completeness and thoroughness. The examinations held at the end of each semester are, consequently, made comprehensive and searching. The grades of students on their examinations and class records are indicated by the numbers 1, 2, 3, 4, 5, the first three numbers indicating completion of the course, 4 conditionally passed, and 5 not passed. The faculty will not hesitate to drop a student from the rolls at any time during the year when satisfied that he is neglecting his studies, is not conforming to the requirements of the College, or is not fitted for the profession of law.

Students who have outside work, as in the Government departments or other offices, may be allowed to take a maximum of fourteen hours a week, which may be reduced at any time, if deemed advisable by the dean. Students who devote all their time to the work, when permitted by the dean, can graduate in three years; unsatisfactory grades will cause such permission to be revoked.

THESIS

Each candidate for a diploma is required, in his senior year, to prepare and present a satisfactory thesis upon some subject upon which the law is unsettled, disputed, or in a formative condition. The thesis must consist of a thorough and intelligent comparison and discussion of the cases pertaining to the subject. It must be not less than 4,000 words in length and must be filed with the dean on or before the 1st day of January of the year in which the degree is to be granted.

DEGREE

Students must complete the full courses of instruction, perform all required exercises, and pass all examinations to the satisfaction of the faculty before being recommended for the degree of Bachelor of Laws.

INFORMATION

For further information, address the secretary of the College of Law, University of the Philippines, Manila, P. I. The dean or the secretary will be in the school building from 5 to 6 p. m. from June 24 to July 1, 1912, for the purpose of conferring with students.

COURSES OF INSTRUCTION

First Year

FIRST SEMESTER

Elementary Law.—This course gives a general view of the development of law and of rights, remedial and substantive; a description of the sources of the law in force in the Philippines, and a systematic outline of the principal branches of the law, public and private. Its chief purposes are to set forth the fundamental conceptions which underlie every department of the law, and to indicate the subject and scope of the various special courses offered in the curriculum.

Text-book: Clark on Elementary Law, with explanatory lectures.

[2 units.

Institutes of Roman Law.—Lectures, with assigned reading.

[2 units. Judge LOBINGIER.

Obligations (*Contracts*).—Includes Quasi Contracts. Assigned work from the Civil Code, and cases from the Philippine Reports.

Text-book: Bishop on Contracts, with lectures.

[3 units. Judge CROSSFIELD.

Persons and Family Relations.—Study of the provisions of the Civil Code; General Orders, No. 68, etc. Assigned cases from the Philippine Reports.

Text-book: Tiffany's Persons and Domestic Relations.

[2 units. Mr. SOBRAL.

United States Government.—Lectures on the administration and government of the United States, with assigned reading.

[2 units. Justice CARSON.

Use of Law Books.—Subjects covered: Where to find the law; how to use decisions and statutes (including study of cases); how to find the law; legal bibliography.

Text-book: Brief Making, by various authors.

[1 unit. Mr. BOCOBO.

SECOND SEMESTER

Agency.—Assigned work from the Civil Code and the Code of Commerce. Cases from the Philippine Reports.

Text-books: Mechem, Outlines of Agency; Mechem, Cases on Agency.

[2 units. Mr. SOBRAL.

Modern Civil Law.—A general view of the private law of Spain and France, and, if time permits, Italy and Germany.

[2 units. Judge LOBINGIER.

Obligations (*Contracts*).—Continuation of course of first semester.

[3 units. Judge CROSSFIELD.

Philippine Government.—Lectures on the administration and government of the Philippine Islands, with assigned reading.

[2 units. Mr. MALCOLM.

Public Speaking.—Elements of elocution; lectures and practice. Reference book: Bogart, Manual of Elocution.

[2 units. Mr. WRIGHT.

Torts.—Text-book: Cooley on Torts. Study of assigned cases.

[3 units. Mr. DE WITT.

SECOND YEAR

FIRST SEMESTER

Bailments and Carriers.—Brief consideration of bailments in general and particular attention to the law of pledge, innkeepers, and common carriers of goods; carriers of passengers; the post-office and telegraph and telephone companies as carriers of messages. Assigned work from the Civil Code and Code of Commerce; cases from the Philippine Reports.

Text-book: Schouler, Bailments and Carriers.

[3 units. Mr. BOCOBO.

Crimes.—Study of the Penal Code and penal Acts of the Philippine Commission and Legislature. Assigned cases from the Philippine Reports.

[2 units. Mr. HARVEY.

Debating.—Practice, with criticism.

Text-book: Laycock and Scales, Argumentation and Debate.

[2 units. Mr. WRIGHT.

Partnership.—Assigned work from the Civil Code and the Code of Commerce; cases from the Philippine Reports.

Text-book: Mechem, Outlines of Partnership.

[2 units. Mr. DE WITT.

Practice in Justice Courts.—Text-book: Lobingier, Philippine Practice.

[1 unit. Judge LOBINGIER.

Property, both Real and Personal, including Sales.—A study of the provisions of the Civil Code, and of assigned cases from the Philippine Reports.

[3 units.

SECOND SEMESTER

Crimes.—Continuation of course of first semester.

[2 units. Mr. HARVEY.

Criminal Procedure.—A study of General Orders, No. 58; assigned cases from the Philippine Reports.

Text-book: Clark on Criminal Procedure.

[3 units. Judge LOBINGIER.

Negotiable Instruments.—A study of the Negotiable Instruments Law. Assigned cases.

Text-book: To be selected later.

[3 units. Mr. FISHER.

Oratory.—Lectures; a study of the lives of great orators; recitations by students. Each student must write one complete and finished oration.

[2 units. Mr. Wright.

Property.—Continuation of course of first semester.

[2 units.

Water Rights and Irrigation.—Study of the Law of Waters and the Irrigation Law, with explanatory lectures.

[1 unit.

THIRD YEAR

FIRST SEMESTER

Civil Procedure.—Study of the Code of Civil Procedure, with assigned cases from the Philippine Reports.

[3 units. Judge Lobingier.

Damages.—Lectures and assigned cases.

Text-book: Mechem and Gilbert, Cases on Damages.

[2 units. Mr. Weissenhagen..

Evidence.—Study of the rules of evidence found in the Code of Civil Procedure; assigned cases.

Text-books: McKelvey on Evidence. Wigmore's Cases on Evidence.

[2 units.

Insurance.—Based on the pertinent provisions of the Civil Code and the Code of Commerce; cases from the Philippine Reports.

Text-book: Vance on Insurance.

[1 unit. Mr. Bocobo.

Mining Law.—Lectures, with assigned work.

[1 unit. Judge Ingersoll.

Mortgages.—Study of the Mortgage Law and the Chattel Mortgage Law; assigned cases from the Philippine Reports.

[3 units. Mr. Bocobo.

Private Corporations.—A study of the pertinent provisions of the Code of Commerce and the Corporation Law of the Philippine Islands.

Text-books: Elliott on Private Corporations; Wilgus, Cases on Private Corporations.

[2 units. Mr. De Witt.

SECOND SEMESTER

Civil Procedure.—Continuation of course of first semester.

[3 units. Judge Lobingier.

Conveyancing.—Practical work in the actual preparation of all the more important forms of conveyances, including there-under deeds, mortgages, wills, and assignments of various sorts, contracts, agreements, corporate and partnership articles, and other instruments as the lawyer in actual practice is likely to be called upon to prepare.

[3 units.

Evidence.—Continuation of course of first semester.

[2 units.

Land Law and Registration.—Study of the Land Law and the Land Registration Act. Cases from the Philippine Reports.

[3 units.

Municipal Corporations.—Assigned work.

Text-book: Elliot's Municipal Corporations.

[1 unit.

Private Corporations.—Continuation of course of first semester.

[2 units. MR. DE WITT.

FOURTH YEAR

FIRST SEMESTER

Code Review.—A review of the Civil Code, Code of Commerce, Penal Code, Code of Civil Procedure, and the Code of Criminal Procedure, with consideration of previous examination papers, preparing the student especially for the bar examination.

[2 units.

Constitutional Law.—Text-books: Cooley's Principles of Constitutional Law, and McClain's Cases on Constitutional Law.

[2 units.

Public Officers and Extraordinary Legal Remedies.—Presents the general principles of the law of public officers. Especial attention is given to the writs of mandamus, quo warranto, certiorari, habeas corpus, injunction, and prohibition, especially as these writs are described and interpreted in the acts of the Philippine Commission and Legislature and in the opinions of the Supreme Court of the Philippine Islands.

Text-book: Goodnow's Cases on the Law of Officers.

[2 units.

Public International Law.—Text-books: Davis on International Law; Scott's Cases on International Law.

[3 units.

Wills and Administration.—Comprehends the law of descent and distribution, gifts *causa mortis*, and nature of wills; formalities prescribed by law for the due execution of a will; the probating of wills, the administration of decedent's estates, etc.

Study of the pertinent provisions of Philippine law and Philippine cases.

Text-book: Costigan's Cases on Wills and Administration.

[3 units.

Criminal Court Practice.—The purpose of the court is to afford to the student practical instruction in pleading and practice and actual experience in the commencement and trial of cases through all their stages.

Thesis.—See page 191 hereof.

SECOND SEMESTER

Admiralty.—Study of the appropriate portions of the Code of Commerce.

Text-book: Ames's Cases on Admiralty.

[2 units.

Bankruptcy and Insolvency.—Lectures.

[1 unit.

Code Review.—Continuation of course of first semester.

[2 units.

Copyrights, Patents and Trade-marks.—Lectures.

[1 unit.

Customs Practice.—Lectures.

[1 unit.

Medical Jurisprudence.—Lectures.

[1 unit.

Practice.—Lectures on legal ethics, office equipment, etc.; practical suggestions for practice.

[1 unit.

Private International Law.—Text-book: Lorenzen's Cases on Conflict of Laws.

[3 units.

Civil Court Practice.—Follows same plan as criminal court practice in first semester.

Thesis.

OUTLINE OF SCHEDULE OF COURSES

FIRST YEAR

First semester.	Units.	Second semester.	Units.
Elementary Law	2	Agency	2
Institutes of Roman Law	2	Modern Civil Law	2
Obligations (Contracts)	3	Obligations (Contracts)	3
Persons and Family Relations	2	Philippine Government	2
United States Government	2	Public Speaking (Elements of Elocution)	2
Use of Law Books	1	Torts	3
Total	12	Total	14

OUTLINE OF SCHEDULE OF COURSES—Continued

SECOND YEAR

First semester.	Units.	Second semester.	Units.
Bailments and Carriers	3	Crimes	2
Crimes	2	Criminal Procedure	3
Debating	2	Negotiable Instruments	3
Partnership	2	Oratory	2
Practice in Justice Courts	1	Property	2
Property	3	Water Rights and Irrigation	1
Total	13	Total	13

THIRD YEAR

Civil Procedure	3	Civil Procedure	3
Damages	2	Conveyancing	3
Evidence	2	Evidence	2
Insurance	1	Land Law and Registration	3
Mining Law	1	Municipal Corporations	1
Mortgages	3	Private Corporations	2
Private Corporations	2	Total	14
Total	14		

FOURTH YEAR

Code Review	2	Admiralty	2
Constitutional Law	2	Bankruptcy and Insolvency	1
Public officers and Extraordinary Legal Remedies	2	Code Review	2
Public International Law	3	Copyrights, Patents and Trade Marks	1
Wills and Administration	3	Customs Practice	1
Criminal Court Practice	......	Medical Jurisprudence	1
Thesis	......	Practice (includes Legal Ethics)	1
Total	12	Private International Law	3
		Civil Court Practice	......
		Thesis	......
		Total	12

There is thus required, for graduation, the completion of 120 units, 104 as given above, and 16 units granted for the thesis and practice court work.

Students, College of Law, 1911–12

FIRST-YEAR CLASS (118)

Agana, Marcelino.
Albaña, Mileton.
Alcid, Valentin.
Aligada, Orencio.
Alisangco, Mariano R.
Asbury, Charles E.
Baltao, Eugenio.
Bañagale, Paulino.
Barrera, Jose E.
Bautista, Pantaleon.
Belmonte, Gabriel.
Bengson, Vicente.
Binag, Miguel.
Borlongan, Mateo.
Buenaventura, Catalino.
Canto, Constantino Z.
Cantos, Alfredo M.
Castelo, Gregorio S.
Clemenia, Engracio F.
Concepcion, Felix.
Concepcion, Hermógenes.
Cuyugan, Antonio.
De la Paz, Fabian.
De las Alas, Teofilo.

Students, College of Law, 1911–12—Continued

FIRST-YEAR CLASS (118)—continued

Del Rosario, Vicente.
Dimaguila, Victoriano.
Domingo, Bartolomé.
Dominguez, Pedro.
Dumpit, Miguel O.
Elayda, Basilio.
Espejo, Cornelio.
Esquivel, Cecilio R.
Estella, Felipe E.
Estella, Nicolas.
Fonacier, Jose S.
Garcia, Gaudencio.
Gil, Jose.
Gonzalez, Javier
Gonzalez, Juan F.
Goyena, Manuel G.
Guingona, Jose G.
Gullas Vicente.
Herrera, José Cruz.
Ibañez, Fidel.
Icasiano, Alfredo.
Jamison, Edwin C.
Javier, Benedicto.
Jimenea, Ramon T.
José, Rafael.
Jugo, Fernando.
Kalaw, Máximo M.
Kamantigue, Jacinto M.
Laguio, Constancio.
Laperal, Arcadio.
Laurel, José P.
Lavides, Francisco.
Leaño, Eladio R.
Leaño, Melecio.
Legaspi, Paz A.
Lopez, Alfredo Q.
Lopez, Eusebio.
Lorenzo, Pablo.
Luna, Juan L.
Mañago, Faustino T.
Mañalac, Anatalio.
Marcos, Antonio.
Marfori, Felix E.
Martin, Mateo.
Martinez, Lorenzo.
Merced, Felino.
Millares, Anastasio P.
Naidas, Andres.
Natividad, Felipe.
Nepomuceno, Ricardo L.
Noble, H. Lawrence.
Padilla, Pablo R.
Padilla, Sabino.
Palileo, Aurelio H.
Panis, Bibiano R.
Paredes, Gerónimo.
Paredes, Jesús.
Patiño, Saturnino.
Poblete, Pedro M.
Power, Edward.
Quirino, Elpidio.
Ramos, Constancio.
Ramos, Eusebio.
Reyes, Alexander.
Reynoso, Telesforo.
Ricamora, Demetrio.
Rice, Carl E.
Rivas, José A.
Rustia, Emilio.
Santeco, Ignacio.
Santiago, Daniel.
Santos, Alejandro.
Santos, D. J.
Sarenas, Juan A.
Sebastian, Proceso E.
Sempio, Antonio G.
Singuimoto, Gavino A.
Steven, John B.
Stevens, E. N.
Sunga, Benito.
Tan, Bienvenido A.
Tan, Carlos.
Teodoro, José.
Tolentino, Sotero C.
Valera, Federico P.
Valera, Frank.
Vargas, George B.
Ver, Jeronimo.
Villamin, Vicente.
Villanueva, Francisco.
Yamzon, Victoriano.
Ycasiano, Ramon A.
Yulo, José.
Zulueta, José.

SECOND-YEAR CLASS (29)

Aquino, Bernabé.
Benitez, Eulogio.
Brady, William C.
Cajulis, Felix.
Cheek, William D.
Córdova, Gregorio.
Dádivas, Manuel V.
De Guzman, Alejandro.
De Mesa, Nazario.
De Selms, Charles C.
Espiritu, José.
Garcia, Eutiquiano.
Hilado, Emilio Y.
Hilado, Serafin P.
Lacson, Ricardo C.
Lowalhati, Rosauro.
MacMahon, John C.
Mueller, William F.
Ocampo, Feliciano.
Parás, Ricardo.
Ray, William N.
Roxas, Manuel A.
Santiago, Vicente.
Santos, Quirino A.
Tanner, A. D.
Torres, Aurelio.
Vickers, James C.
Victoriano, Gustavo.
Virata, Emilio P.

SPECIAL STUDENTS (7)

Chase, H. E.
Clifford, Carl G.
Gloria, José P.
Henneman, H. E.
Jewett, G. A.
Luna, Rufino.
McCoy, H. J.

Total attendance, 154.

SUMMARY OF ATTENDANCE DURING 1911–12

College of Liberal Arts	215
College of Medicine and Surgery	56
College of Agriculture	186
College of Veterinary Science	14
College of Engineering	11
College of Law	154
	636
Duplications	37
Total attendance in College Departments	599

THE UNIVERSITY OF THE PHILIPPINES

THE SCHOOL OF FINE ARTS

SECOND ANNUAL ANNOUNCEMENT

The School of Fine Arts

RAFAEL ENRIQUEZ,
Dean of the School of Fine Arts and Instructor in Color and Composition.

MIGUEL ZARAGOZA,
Instructor in Anatomy.

JOSE MARIA ASUNCION,
Secretary of the School of Fine Arts and Instructor in the History of Art.

JOAQUIN HERRER,
Instructor in Landscape and Drawing from Life.

ANTONIO GARCIA,[1]
Instructor in Engraving.

VICENTE FRANCISCO,
Instructor in Sculpture.

VICENTE RIVERA Y MIR,
Instructor in Drawing.

FABIAN DE LA ROSA,
Instructor in Decorative Art.

ISIDORO BUENAVENTURA,
Instructor in Elementary Drawing.

A five years' course of study is provided. Students are admitted by competitive examination as vacancies occur. A limited number of elementary students who show marked proficiency in drawing are admitted. For further particulars apply to the dean.

Attendance 1911-12, 801.

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[1] Died.

1911-1912

JUNE

Sun	Mon	Tue	Wed	Thu	Fri	Sat
—	—	—	—	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	—
—	—	—	—	—	—	—

JULY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
—	—	—	—	—	—	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	—	—	—	—	—

AUGUST

Sun	Mon	Tue	Wed	Thu	Fri	Sat
—	—	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	—	—
—	—	—	—	—	—	—

SEPTEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
—	—	—	—	—	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	—	—	—	—

NOVEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
—	—	—	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	—	—

DECEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	—	—	—	—	—	—

JANUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
—	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	—	—	—
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FEBRUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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18	19	20	21	22	23	24
25	26	27	28	29	—	—
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MARCH

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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3	4	5	6	7	8	9
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17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	—	—	—	—	—	—

APRIL

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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28	29	30	—	—	—	—
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MAY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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19	20	21	22	23	24	25
26	27	28	29	30	31	—
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1912-1913

JUNE

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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9	10	11	12	13	14	15
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23	24	25	26	27	28	29
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JULY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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14	15	16	17	18	19	20
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28	29	30	31	—	—	—
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AUGUST

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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18	19	20	21	22	23	24
25	26	27	28	29	31	31
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SEPTEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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8	9	10	11	12	13	14
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22	23	24	25	26	27	28
29	30	—	—	—	—	—

OCTOBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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13	14	15	16	17	18	19
20	21	22	23	24	25	26
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NOVEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	—	—	—	—

JANUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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19	20	21	22	23	24	25
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FEBRUARY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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16	17	18	19	20	21	22
23	24	25	26	27	28	—

MARCH

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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30	31	—	—	—	—	—

APRIL

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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20	21	22	23	24	25	26
27	28	29	30	—	—	—
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MAY

Sun	Mon	Tue	Wed	Thu	Fri	Sat
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
—	—	—	—	—	—	—

GENERAL OFFICES OF THE UNIVERSITY

547 CALLE HERRAN, MANILA

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